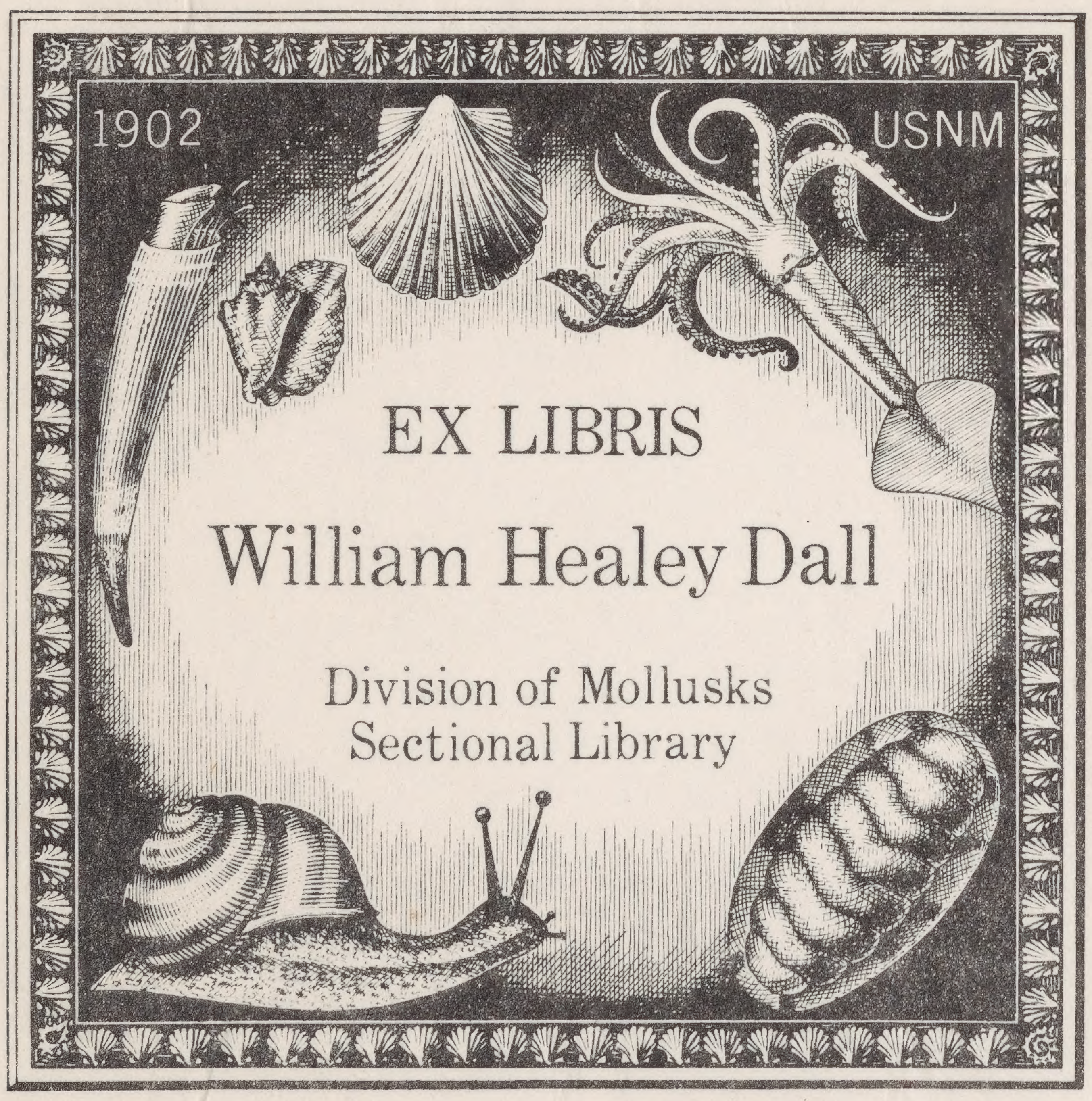

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TOGETHER WITH

DESCRIPTIONS OF NEW SPECIES IN THE FAMILIES NAÏADES,
COLIMACEA, LYMNÆANA, MELANIANA
AND PERISTOMIANA.

READ BEFORE THE AMERICAN PHILOSOPHICAL SOCIETY, AND ORIGINALLY
PUBLISHED IN ITS TRANSACTIONS.

WITH NUMEROUS PLATES.

BY ISAAC LEA,

MEMBER OF THE AM. PHIL. SOC.; OF THE ZOOLOGICAL SOC.
OF LONDON; OF THE IMPERIAL SOC. OF NAT.
HIST. OF MOSCOW; ETC. ETC. ETC.

VOL. III.

PHILADELPHIA:
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TO PROFESSOR LARDNER VANUXEM.

My Dear Friend:

My earliest efforts in the study of Natural Science are closely connected with our youthful and continued friendship. To whom, then, could I better dedicate this volume than to you, who have since cultivated science with so much success? I beg you to receive this volume as a token of the expression of my admiration of your successful studies, with the sincere desire that our friendly relations may long continue, as they have long existed.

Most faithfully
And truly yours,
ISAAC LEA.

Philadelphia, November 24, 1842.

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CORRIGENDA.

Page 3. For *Melania lævigata*, read *Melania lævis; lævigata* being preoccupied by Lamarck.

Do. 5. For *Melania rufa*, read *Melania rufescens.* The specific name *rufa*, being preoccupied by Dr. Philippi, for a Sicilian species.

Do. 15. For *Melania corrugata*, read *Melania rugosa; corrugata* being preoccupied by Lamarck.

Do. 24. For *Melania striata*, read *Melania striatula; striata* being preoccupied by Mr. Sowerby, for a fossil species.

Description of New Fresh Water and Land Shells. By Isaac Lea. Read Jan. 15, 1841.

Lamarck, in describing the genus *Melania*, says that they are nearly all exotic. In fact, he does not mention a single species as inhabiting the rivers of Europe. In the United States, we find a great number distributed over a wide geographical range, from the Columbia River to the St. Lawrence. Separating Mr. Say's genus *Anculosa* from *Melania*, we have remaining, described by him and other Zoologists, about sixty species, which, with the fifty-seven now proposed, will make the large number of about one hundred and seventeen species known to inhabit the waters of the United States. The waters of Tennessee seem particularly productive of the different forms of this genus, and I have no doubt that many new ones will be added to the catalogue, as we have numerous ardent and industrious naturalists labouring in the field of investigation.

The greater part of the species which I now propose, it will be observed, were collected by Dr. Troost, who, in his Geological Survey of the state of Tennessee during several years, gave attention enough to its Natural History, to enable us to add largely to the Mollusca already known. Mr. S. M. Edgar and Dr. Currey, assistant geologists in that survey, have also obliged me by the use of their specimens.

As the indigenous and exotic species of the genus *Melania* now known are so numerous, I propose to divide them into sections, comprising—

1. The Smooth.
2. The Plicate.
3. The Carinate.
4. The Sulcate.
5. The Striate.
6. The Tuberculate.
7. The Granulate.
8. The Cancellate.
9. The Spinose.

SECTION I.—SMOOTH MELANIÆ.

MELANIA HILDRETHIANA. Plate 5., Fig. 1.

Testâ lævi, fusiformi, subcrassâ, corneâ; spirâ brevi, mucronatâ; suturis valdè impressis; anfractibus quinis, convexis; aperturâ magnâ, ovatâ, infernè angulatâ, vel albâ vel purpureâ.

Shell smooth, fusiform, rather thick, horn-colour; spire short, pointed at the apex; sutures deeply impressed; whorls five, convex; aperture large, angular at base, ovate, white or purple.

Hab. Ohio River, near Marietta. Dr. Hildreth.
My Cabinet, and Cabinets of Dr. Hildreth and P. H. Nicklin.
Diam. .25, Length .37 of an inch.

Remarks.—The aperture of this little species is nearly two-thirds the length of the shell. In outline it is allied to *M. fusiformis* herein described. It may be distinguished by the sutures being more impressed, and the base being more angular. One of the specimens is purple on the columella, and at the base. I dedicate it to Dr. Hildreth, to whose kindness I owe several specimens.

MELANIA CASTANEA. Plate 5., Fig. 2.

Testâ lævi, clavæformi, subtenui, tenebroso-castaneâ; spirâ elevatâ, prope apicem carinatâ; suturis parvis; anfractibus octonis, convexiusculis; aperturâ parvâ, ellipticâ, purpureâ.

Shell smooth, club-shaped, rather thin, dark brown; spire elevated, carinate towards the apex; sutures small; whorls eight, somewhat convex; aperture small, elliptical, purple.

Hab. Maury County, Tenn. Thos. R. Dutton.
My Cabinet, and Cabinet of T. R. Dutton.
Diam. .25, Length .67 of an inch.

Remarks.—This species is remarkable for its club-shaped form. It differs from the *clavæformis* herein described, in having a less pointed apex, in being a smaller species, and in being of a darker colour. The first three or four whorls are carinate, and disposed also to be striate and plicate. The aperture is about one-third the length of the shell. The three individuals before me are entirely purple inside, and this gives a very dark appearance to the shell.

MELANIA LÆVIGATA. Plate 5., Fig. 3.

Testâ lœvi, obtuso-conicâ, subtenui, nitidâ, luteolâ; spirâ breviusculâ, prope apicem carinatâ; suturis linearibus; anfractibus septenis, subconvexis; aperturâ sub-grandi, ellipticâ; infernè angulatâ, albidâ.

Shell smooth, obtusely conical, rather thin, shining, yellowish; spire rather short, carinate towards the apex; sutures linear; whorls seven, rather convex; aperture rather large, elliptical, angular at base, whitish.

Hab. Alabama River at Claiborne. Judge Tait.

My Cabinet.

Diam. .25, Length .55 of an inch.

Remarks.—With the *M. Taitiana* herein described, came two specimens of this species, which differs from the *Taitiana* in the elevation of the spire, and the form and size of the aperture. In the most perfect specimen, the columella and base are purplish: The aperture is more than one-third the length of the shell. The upper whorls are slightly carinate on their lower portion.

MELANIA KIRTLANDIANA. Plate 5., Fig. 4.

Testâ lœvi, acuto-conicâ, sub-crassâ, nitidâ, corneâ; spirâ elevatâ, prope apicem carinatâ; suturis impressis; anfractibus novenis, convexiusculis; aperturâ parvâ, ellipticâ, albidâ.

Shell smooth, acutely conical, rather thick, shining, horn-coloured; spire elevated, towards the apex carinate; sutures impressed; whorls nine, rather convex; aperture small, elliptical, whitish.

Hab. Richmond, Indiana; Duck Creek, near Cincinnati; and Miami, Ohio. T. G. Lea. Little Miami, Dr. Warder.

My Cabinet, and Cabinets of T. G. Lea, P. H. Nicklin, and Dr. Warder.

Diam. .30, Length .87 of an inch.

Remarks.—This is a finely-formed, graceful species, with an indistinct carina on the lower part of the whorls, near the apex. The aperture is nearly one-third the length of the shell. I name it after Professor Kirtland, of Poland, Ohio.

MELANIA TAITIANA. Plate 5., Fig. 5.

Testâ lœvi, conoideâ, subtenui, nitidâ, corneâ; spirâ decisâ, ad apicem carinatâ; suturis impressis, anfractibus subconvexis; aperturâ parvâ, ellipticâ, infernè subangulatâ, albidâ.

Shell smooth, conical, rather thin, shining, horn-colour; spire truncate; carinate towards the apex; sutures impressed; whorls rather convex; aperture small, elliptical, subangular at base, whitish.

Hab. Alabama River, at Claiborne. Judge Tait.
My Cabinet, and Cabinet of P. H. Nicklin.
Diam. .25, Length .80 of an inch.

Remarks.—Several years previously to the death of my friend, Judge Tait, he sent me a number of this species, which in form resembles *M. blanda,* described herein. Most of them are without bands; some, however, are finely banded, and all are mutilated at the apex. I dedicate this species to my lamented friend, to whose kindness I owe so many beautiful and interesting objects in the natural history and geology of Alabama.

MELANIA DUBIOSA. Plate 5., Fig. 6.

Testâ lævi, conoideâ, subtenui, corneâ; spirâ subelevatâ; suturis linearibus; anfractibus septenis, subconvexis; aperturâ ellipticâ, parvâ, infernè subangulatâ, albidâ.

Shell smooth, conical, rather thin, horn-colour; spire rather elevated; sutures linear; whorls seven, somewhat convex; aperture elliptical, small, subangular at the base, whitish.

Hab. Tenn. Dr. Troost.
My Cabinet, and Cabinets of Dr. Troost and P. H. Nicklin.
Diam. .30, Length .75 of an inch.

Remarks.—This is a rather small species, somewhat like *M. simplex,* Say; but seems to me to differ, in having a more elevated spire, and a smaller aperture. The aperture is rather more than one-third the length of the shell.

MELANIA EBENUM. Plate 5., Fig. 7.

Testâ lævi, obtuso-conoideâ, crassâ, nigrâ; spirâ obtusâ; suturis parvis; anfractibus subconvexis; aperturâ subgrandi, ovatâ, infernè subangulatâ, intus purpuratâ.

Shell smooth, obtusely conical, thick, black; spire obtuse; sutures small; whorls somewhat convex; aperture rather large, ovate, subangular at base, within purplish.

Hab. Robinson County, Tenn. Dr. Currey.
My Cabinet, and Cabinet of Dr. Currey.
Diam. .30, Length .47 of an inch.

Remarks.—A very dark-coloured and rather robust species. It resembles *M. tenebrosa* herein described, but differs in having the whorls rather more convex, and in the outer lip being more curved. All the specimens received had the apex eroded. The number of whorls is therefore not ascertained. The aperture is more than one-third the length of the shell. It is usually purplish on the whole of the inside of the aperture. Some specimens are, however, bluish.

MELANIA RUFA. Plate 5., Fig. 8.

Testâ lævi, turritâ, subtenui, nitidâ, tenebroso-rufâ; spirâ elevatâ; suturis impressis; anfractibus convexis, superioribus carinatis; aperturâ parvâ, ellipticâ, infernè subangulatâ, intus purpuratâ.

Shell smooth, turreted, rather thin, shining, dark-red; spire elevated; sutures impressed; whorls convex, towards the apex carinate; aperture small, elliptical, subangular below, within purplish.

Hab. Mamma's Creek, Tenn. S. M. Edgar.
My Cabinet, and Cabinet of Mr. Edgar.
Diam. .30, Length .85 of an inch.

Remarks.—In form this species resembles *M. teres* herein described. It differs in the colour being red, and in being carinate on the superior whorls. The most perfect specimen in my possession has the few first whorls broken. I should suppose a perfect one would have eight whorls, and the aperture be one-fourth the length of the shell.

MELANIA FUSIFORMIS. Plate 5., Fig. 9.

Testâ lævi, fusiformi, subtenui, luteâ, mucronatâ; spirâ brevi; suturis linearibus; anfractibus senis, ultimo magno et inflato; aperturâ ovato-productâ, albidâ.

Shell smooth, fusiform, rather thin, yellow, pointed at the apex; spire short; sutures linear; whorls six, the last being large and inflated; aperture ovately elongated, whitish.

Hab. Tennessee. Dr. Troost.
My Cabinet, and Cabinet of Dr. Troost.
Diam. .27, Length .50 of an inch.

Remarks.—This is a very remarkable species in regard to its form, resembling as it does the young of some species of *Columbella.* The aperture is about two-thirds the length of the shell, and is somewhat angular at base, above it turns inward. One of six individuals before me has two rather broad bands. On the superior whorls may be observed an indistinct stria.

MELANIA CLAVÆFORMIS. Plate 5., Fig. 10.

Testâ lævi, clavæformi, subtenui, castaneo-fuscâ, nitidâ; spirâ acutâ; suturis subimpressis; anfractibus octonis, convexis; aperturâ productâ, pallido-purpureâ.

Shell smooth, club-shaped, rather thin, chestnut brown, shining; spire acute; sutures somewhat impressed; whorls eight, convex; aperture elongated, light purple.

Hab. Ocoee District, Tenn. Dr. Troost.
" Clinch River, Tenn. Dr. Warder.
My Cabinet, and Cabinets of Dr. Troost, Dr. Warder, and P. H. Nicklin.
Diam. .27, Length .67 of an inch.

Remarks.—The aperture is about one-third the length of the shell. In colour it differs from most species.

MELANIA GRACILIS. Plate 5., Fig. 11.

Testâ lævi, clavæformi, subtenui, corneâ; spirâ acutâ; suturis impressis; anfractibus octonis, convexis: aperturâ parvâ, ovatâ, albidâ.

Shell smooth, club-shaped, rather thin, horn-coloured; spire acute; sutures impressed; whorls eight, convex; aperture small, ovate, whitish.

Hab. Tenn. Dr. Troost.
My Cabinet, and Cabinet of Dr. Troost.
Diam. .32, Length .75 of an inch.

Remarks.—This resembles the *clavata* in form, but is rather more robust. It differs also in colour. The aperture is rather more than one-third the length of the shell.

MELANIA SUBSOLIDA. Plate 5., Fig. 12.

Testâ lævi, subfusiformi, subsolidâ, corneâ; spirâ acutâ; suturis impressis; anfractibus subconvexis; aperturâ subproductâ, intus purpureâ.

Shell smooth, subfusiform, somewhat solid, horn-coloured; spire acute; sutures impressed; whorls somewhat convex; aperture somewhat elongated, within purple.

Hab. Tenn. Dr. Troost.

My Cabinet, and Cabinet of Dr. Troost.

Diam. .32, Length .82 of an inch.

Remarks.—This species has a strong resemblance to *M. simplex*, Say. It is however more elevated in the spire. It is purplish within, but white towards the margin of the lip.

MELANIA OCOËENSIS. Plate 5., Fig. 13.

Testâ lævi, conoideâ, subcrassâ, tenebroso-corneâ; spirâ obtusâ, apud apicem-lineis notatâ; suturis impressis; anfractibus subconvexis; aperturâ parvâ, ovatâ, cæruleâ.

Shell smooth, conical, somewhat thick, dark horn-coloured; spire obtuse, toward the apex lined; sutures impressed; whorls somewhat convex: aperture small, ovate, bluish.

Hab. Ocoee District, Tenn. Dr. Troost.

My Cabinet, and Cabinet of Dr. Troost.

Diam. .32, Length .92 of an inch.

Remarks.—Five specimens are before me, all of which are more or less decollate. None of them have bands. Oblique, irregular striæ may be observed more or less on all those which I have examined.

MELANIA SUBCYLINDRACEA. Plate 5., Fig. 14.

Testâ lævi, subcylindraceâ, subcrassâ, corneâ; spirâ obtuso-elevatâ; suturis impressis; anfractibus convexis; aperturâ parvâ, ovatâ, albidâ.

Shell smooth, sub-cylindrical, somewhat thick, horn-colour; spire obtusely elevated; sutures impressed; whorls convex; aperture small, ovate, whitish.

Hab. Tenn. Dr. Troost.

My Cabinet, and Cabinet of Dr. Troost.

Diam. .32, Length .85 of an inch.

Remarks.—This is a club-shaped species with an aperture about the third of the length of shell. All the specimens sent by Dr. Troost are more or less decollate.

MELANIA SORDIDA. Plate 5., Fig. 15.

Testâ lævi, conoideâ, subcrassâ, tenebroso-corneâ; suturis impressis; anfractibus subconvexis; aperturâ subgrandi, subrotundâ, intus cœruleâ.

Shell smooth, conical, somewhat thick, dark horn-coloured; sutures impressed; whorls somewhat convex; aperture rather large, somewhat rounded, within bluish.

Hab. Tennessee. Dr. Troost.
My Cabinet, and Cabinet of Dr. Troost.
Diam. .40, Length 1.02 of an inch.

Remarks.—The whole of five individuals before me have the apex decollate. This species closely resembles the *Ocoëensis* herein described. It is, however, larger in the aperture, which is more rotund, and the species seems to be larger.

MELANIA REGULARIS. Plate 5., Fig. 16.

Testâ lævi, conoideâ, subcrassâ, tenebroso-corneâ; spirâ elevatâ; suturis subimpressis; anfractibus planulatis; aperturâ parvâ, albidâ.

Shell smooth, conical, rather thick, dark horn-coloured; spire elevated: sutures somewhat impressed; whorls flat; aperture small, whitish.

Hab. Oconee District, Tenn. Dr. Troost.
My Cabinet, and Cabinet of Dr. Troost.
Diam. .40, Length 1.22 of an inch.

Remarks.—This species has a regularly increasing and elevated spire. Neither of the three before me have perfect tips. The number of whorls must be about ten. The aperture is about one-fourth the length of the shell.

MELANIA FULIGINOSA. Plate 5., Fig. 17.

Testâ lævi, fusiformi, subinflatâ, subcrassâ, tenebroso-fuscâ; spirâ obtusâ; suturis impressis; anfractibus senis, subconvexis; aperturâ magnâ, ad basim angulatâ et canaliculatâ.

Shell smooth, fusiform, somewhat inflated, rather thick, dark brown; spire obtuse; sutures impressed; whorls six, somewhat convex; aperture large, at the base angular and channeled.

Hab. Big Bigby Creek, Maury Co. Tenn. T. R. Dutton.
My Cabinet, and Cabinet of Mr. Dutton.
Diam. .50, Length .85 of an inch.

Remarks.—In general form this species resembles the *M. Duttoniana*, (nobis) but differs in being less elevated in the spire, in being without tubercles, and of a very dark colour; the substance of the shell is disposed to be purple. The epidermis is thick and very dark. Mr. Dutton found it rare.

MELANIA NICKLINIANA. Plate 5, Fig. 18.

Testâ lævi, obtuso-conoideâ, solidâ, valdè tenebrosâ; suturis impressis; anfractibus senis, subconvexis; aperturâ magnâ, subrotundâ, intus purpuratâ.

Shell smooth, obtusely conical, solid, very dark; sutures impressed; whorls six, slightly convex; aperture large, somewhat rounded, within purple.

Hab. Bath County, Va. P. H. Nicklin.
My Cabinet, and Cabinet of Mr. Nicklin.
Diam. .27, Length .45 of an inch.

Remarks.—This is a robust, small species which seems not to have been before noticed. It was found by Mr. Nicklin in a small stream of cold water at the Hot Springs in Virginia. It is amongst the smallest species I have seen. The purple colour of the interior of most of the specimens, gives the shell a very dark appearance. I owe to the kindness of Mr. Nicklin, to whom I dedicate it, the possession of several specimens of this species. I am under obligations to him also for a fine suite of *M. inflata* (nobis). They were found in New River, Va. being that part of the great Kanawha which is above its junction with the Gauley River. Some of the specimens have longer spires; some are lineolate, some banded, and others are without bands. Thus presenting characters differing so much, as almost to deceive one as to their being identical.*

* Since the above was written I have received from Dr. Warder of Cincinnati a specimen from New River, which, with a re-examination of Mr. Nicklin's specimens, satisfies me that the shell described by Mr. Conrad in the appendix to his "Fresh Water Shells of the United States," under the names of *M. Rogersii* and *dilatata* are identical with my *inflata*, my description bearing date the previous year to his.

Within a few days I have observed in the Boston Journal of Nat. Hist. vol. 3, No. 3, descriptions of two

MELANIA VIRIDIS. Plate 5, Fig. 19.

Testâ lævi, subfusiformi, subcrassâ, viridi; spirâ brevi, obtuso conoideâ; suturis linearibus; anfractibus quinis, subconvexis; aperturâ ovatâ, subgrandi, albâ.

Shell smooth, subfusiform, rather thick, green; spire short, obtusely conical; sutures linear; whorls five, somewhat convex; aperture ovate, rather large, white.

Hab. Vicinity of Cincinnati, Ohio. T. G. Lea.
My Cabinet, and Cabinets of T. G. Lea, and P. H. Nicklin.
Diam. .27, Length .32 of an inch.

Remarks.—Inhabits with the *M. occidentalis* herein described, and resembles it. It is a smaller species, has one more whorl, has a higher spire, and among nine individuals before me, I see no indications of transverse striæ. The aperture is rather more than half the length of the shell.

MELANIA OCCIDENTALIS. Plate 5, Fig. 20.

Testâ lævi, subglobosâ, subcrassâ, viridi; spirâ brevi, mucronatâ; suturis linearibus; anfractibus quaternis, subconvexis; aperturâ ovatâ, magnâ, intus vel purpureâ vel albâ.

Shell smooth, subglobose, rather thick, green; spire short, pointed; sutures linear; whorls four, somewhat convex; aperture ovate, large, within purple or white.

Hab. Vicinity of Cincinnati, Ohio. T. G. Lea.
My Cabinet, and Cabinets of T. G. Lea, and P. H. Nicklin.
Diam. .30, Length .37 of an inch.

Remarks.—This is a fine species about the size of *Melania subglobosa*, Say, (*Anculosa*) and it has been confounded with it. I have specimens of *subglobosa* which were brought by Prof. Vanuxem from the Holston, at the time he gave

new species of *Anculosa* by Mr. Anthony. *Anculotus carinatus* and *Anculotus Kirtlandianus*, both from the falls of the Kanawha. Judging from the description and figures, I am led to the conclusion, that both these were identical with *M. inflata*, and from the great variety of this proteus species, I am not surprised at its being mistaken. The peculiar character, however, of the angle and channel of the base in this species, is evident throughout. I am not aware of the animal having been yet observed: when examined, it may prove to be a true *Anculosa*. If so, the synonymy will stand thus:

Anculosa inflata, Lea.
  Melania dilatata, Conrad.
  Melania Rogersii, Conrad.
  Anculotus carinatus, Anthony.
  Anculotus Kirtlandianus, Anthony.

them to Mr. Say for description. They certainly do not appear to me to be the same, although in many characters they agree. The animal of *occidentalis* I have not seen; the operculum is spiral; at present I prefer to place it among the *Melania*. Some of the varieties before me are very beautifully furnished with raised revolving striæ. When there is a single one, it gives the shell the appearance of being carinate, as it appears near the centre of the whorl. In some specimens these striæ are more numerous; in a single one I have counted fifteen. There appear to be no bands on the outside, but sometimes purple lines on the inside mark the places of the exterior striæ. There is generally more or less colour in the interior and about the columella, the base of which is disposed to be angular. The aperture is nearly three-fourths the length of the shell.*

MELANIA NIAGARENSIS. Plate 5, Fig. 21.

Testâ lævi, obtuso-conicâ, crassâ, corneâ; spirâ brevi; suturis linearibus; anfractibus subplanulatis; aperturâ subgrandi, ellipticâ, intus purpureâ.

Shell smooth, obtusely conical, thick, horn-coloured; spire short; sutures linear; whorls rather flat; aperture rather large, elliptical, within purple.

Hab. Falls of Niagara.
My Cabinet, and Cabinet of P. H. Nicklin.
Diam. .25, Length .55 of an inch.

Remarks.—I obtained this shell many years since at the foot of the falls of Niagara, where it exists in abundance. It may generally have been confounded with *M. depygis*, Say. When I procured it, I placed it in my cabinet under that name with a mark of doubt. It is a smaller shell than the *depygis*, has a shorter spire and a narrower aperture. This species has a purple columella and interior, which in some cases are very dark. The specimens procured were all more or less eroded, and the apex removed. The number of whorls is either six or seven. The aperture is nearly half the length of the shell.

---

* Since the above was written, I have seen in the "Boston Journal of Science," the description and figure by Mr. Anthony, of *Anculotus costatus* which in some respects answers to this shell. Mr. A. says that his shell has "about five costæ revolving around it."

MELANIA GLOBULA. Plate 5, Fig. 22.

Testâ lævi, subglobosâ, tenebroso-fuscâ, fasciatâ; spirâ brevi; suturis impressis; anfractibus quaternis, subconvexis; aperturâ magnâ, subrotundâ, intus cæruleâ.

Shell smooth, subglobose, dark brown, banded; spire short; sutures impressed; whorls four, rather convex; aperture large, nearly round, within bluish.

Hab. Tenn. Dr. Troost.
My Cabinet, and Cabinet of Dr. Troost.
Diam. .22, Length .25 of an inch.

Remarks.—This is a small globose species, with two very broad bands, one immediately over, and the other below the middle of the body whorl. The columella is white, inclined to a rusty hue. The interior of the base is reddish. Some of the specimens are small, and present a variety in which the columella is redder, and the epidermis more yellow, with the same distinctive bands. The aperture is nearly two-thirds the length of the shell.

MELANIA ALTILIS. Plate 5, Fig. 23.

Testâ lævi, subglobosâ, crassâ, pallido-corneâ; spirâ brevi; suturis parvis; anfractibus quaternis, supernè subangulatis; aperturâ magnâ, subrotundâ, albâ.

Shell smooth, subglobose, thick, pale horn-colour; spire short; sutures small; whorls four, obtusely angular above; aperture large, nearly round, white.

Hab. Santee Canal, South Car. Professor Ravenel.
" Susquehanna River, at Havre de Grace, Md.
Paludina altilis. Professor Ravenel's letter.
My Cabinet, and Cabinet of P. H. Nicklin.
Diam. .27, Length .32 of an inch.

Remarks.—Last summer I found a number of this globose little species on the banks of the Susquehanna, and then considered it new, but on examination I found I had the same species, Prof. Ravenel having sent it to me many years since under the name of *Paludina altilis.* I am not aware that Prof. R. has ever described it, never having seen any account of it. His specific name for it is retained, but I have placed it among the *Melania,* it having a distinct spiral operculum. It belongs to a natural group in the genus *Melania*, which have very low spires and a very large body whorl. There is a very slight impression on the superior part of the whorls below the suture. The aperture is about two-thirds the length of the shell. The epidermis in young specimens is a very pale yellow, almost white.

MELANIA STRIGOSA. Plate 5, Fig. 24.

Testâ lævi, turrito-acutâ, tenui, pallido-luteâ, supernè striatâ; spirâ exsertâ; suturis impressis; anfractibus novenis, planulatis; aperturâ parvâ, ellipticâ, ad basim angulatâ, intus cœruleâ.

Shell smooth, acutely turrited, thin, pale yellow, striate above; spire drawn out; sutures impressed; whorls nine, flattened; aperture small, elliptical, angular at the base, within bluish.

Hab. Tenn. Dr. Troost.
" Holston River. Dr. Warder.
My Cabinet, and Cabinets of Dr. Troost, and Dr. Warder.

Diam. .27, Length .85 of an inch.

Remarks.—This species is somewhat like the *teres* herein described. It may be distinguished, however, at once by its flattened whorls and darker colour.

MELANIA VIRGATA. Plate 5, Fig. 25.

Testâ lævi, subrotundâ, subtenui, luteâ, bifasciatâ, nitidâ; spirâ brevi; suturis linearibus; anfractibus convexis; aperturâ magnâ, ellipticâ, albidâ.

Shell smooth, rounded, rather thin, yellow, double-banded, shining; spire short; sutures linear; whorls convex; aperture large, elliptical, whitish.

Hab. Tenn. Dr. Troost.
My Cabinet, and Cabinet of Dr. Troost.

Diam. .20, Length .30 of an inch.

Remarks.—A single specimen only of this small species was sent to me by Dr. Troost. It seems to be mature, and is remarkable for the two broad bands which nearly cover the whorls. The aperture is about half the length of the shell.

MELANIA TENEBROSA. Plate 5, Fig. 26.

Testâ lævi, conoideâ, subcrassâ, subnigrâ; spirâ subelevatâ; suturis impressis; anfractibus planulatis; aperturâ subgrandi, ellipticâ, ad basim angulatâ, intus cæruleâ.

Shell smooth, conical, rather thick, nearly black; spire rather elevated; sutures impressed; whorls flattened; aperture rather large, elliptical, at the base angular, within bluish.

Hab. Tenn. Dr. Troost.

My Cabinet, and Cabinet of Dr. Troost.

Diam. .30, Length .72 of an inch.

Remarks.—Two specimens of this species were sent to me by Dr. Troost, both of which are decollated. On one there is a slight disposition to striæ on the upper remaining whorl. In general outline it resembles a small *Virginica*, Say.

SECTION II.—PLICATE MELANIÆ.

MELANIA TERES. Plate 5, Fig. 27.

Testâ plicatâ, acuto-turritâ, tenui, corneâ; spirâ exsertâ; suturis impressis; anfractibus novenis, convexis; aperturâ parvâ, ellipticâ, intus albidâ.

Shell folded, acutely turrited, thin, horn-coloured; spire drawn out; sutures impressed; whorls nine, convex; aperture small, elliptical, within whitish.

Hab. Tenn. Dr. Troost.

My Cabinet, and Cabinets of Dr. Troost, and P. H. Nicklin.

Diam. .25, Length .87 of an inch.

Remarks.—This is a remarkably elevated species, with the whorls much inflated, and the last whorl very small. Some of the specimens before me are but obscurely folded.

MELANIA OBTUSA. Plate 5, Fig. 28.

Testâ plicatâ, fusiformi, subcrassâ, corneâ; spirâ obtusâ; suturis impressis; anfractibus quaternis, ultimo semi-plicato; aperturâ magnâ, albidâ.

Shell folded, fusiform, rather thick, horn colour; spire obtuse; sutures impressed; whorls four, the last semi-plicate; aperture large, whitish.

Hab. Tenn. Dr. Troost.
My Cabinet, and Cabinet of Dr. Troost.
Diam. .27, Length .55 of an inch.

Remarks.—A fusiform species with costæ or folds half-way down the last whorl.

MELANIA LECONTIANA. Plate 5, Fig. 29.

Testâ plicatâ, conoideâ, crassâ, corneâ; spirâ obtuso-elevatâ; suturis parvis; anfractibus senis, planulatis; aperturâ magnâ, ellipticâ, cœruleâ.

Shell folded, conical, thick, horn colour; spire obtusely elevated; sutures small; whorls six, flattened; aperture large, elliptical, bluish.

Hab. Georgia. Major Le Conte.
My Cabinet, and Cabinet of Major Le Conte.
Diam. .35, Length .80 of an inch.

Remarks.—The folds of this species extend over the whole shell, except the inferior half of the body whorl. The aperture is large, and somewhat dilated, being nearly one-half the length of the shell.

I owe the possession of several specimens to the kindness of Major Le Conte, to whom I dedicate it.

MELANIA CORRUGATA. Plate 5, Fig. 30.

Testâ plicatâ, conoideâ, subtenui, diaphana, transversè striatâ, corneâ; spirâ subelevatâ; suturis valdè impressis; anfractibus septenis, convexis, supernè cancellatis; aperturâ subgrandi, ellipticâ, infra angulatâ, albidâ.

Shell folded, conical, rather thin, translucent, transversely striated, horn colour; spire rather elevated; sutures very much impressed; whorls seven, convex, cancellated above; aperture rather large, elliptical, angular below, whitish.

Hab. Tenn. Dr. Troost.
My Cabinet, and Cabinet of Dr. Troost.
Diam. .22, Length .50 of an inch.

Remarks.—This is a small, folded species of which a single specimen was received from Dr. Troost. The superior whorls are carinated. The folds extend to the body whorl. The aperture is rather more than one-third the length of the shell.

MELANIA MONOZONALIS. Plate 6, Fig. 31.

Testâ plicatâ, fusiformi, subcrassâ, fasciatâ, pallidâ; spirâ obtusâ; suturis linearibus; anfractibus quinis, subconvexis; aperturâ magnâ, ellipticâ, infra angulatâ, albâ.

Shell folded, fusiform, rather thick, banded, light-coloured; spire obtuse; sutures linear; whorls five, rather convex; aperture large, elliptical, angular at base, white.

Hab. Tenn. Dr. Troost.
My Cabinet, and Cabinet of Dr. Troost.
Diam. 21, Length .42 of an inch.

Remarks.—But a single specimen of this was sent to me by Dr. Troost. It is a very distinct species, and remarkable for a single broad band on the upper part of the whorl. In other specimens this band may not always be found to present the same character; and the number of bands in others again may even be increased. The aperture is about one-half the length of the shell.

MELANIA TEREBRALIS. Plate 6, Fig. 32.

Testâ plicatâ, acuto-turritâ, subtenui, nitidâ, rufo-fuscâ; spirâ valdè elevatâ; suturis valdè impressis; anfractibus novenis, convexis, supernè carinatis; aperturâ parvâ, ellipticâ, albidâ.

Shell folded, acutely turrited, rather thin, shining, reddish brown; spire much elevated; sutures much impressed; whorls nine, convex, carinate above; aperture small, elliptical, whitish.

Hab. Tenn. Dr. Troost.
My Cabinet, and Cabinet of Dr. Troost.
Diam. .24, Length .67 of an inch.

Remarks.—This species differs in the form of the folds from any which have come under my notice. These folds are distant from each other, but slightly raised, and give the shell a varicose appearance. The mouth is about the fifth part of the length of the shell.

MELANIA COLUMELLA. Plate 6, Fig. 33.

Testâ obscuro-plicatâ, conoideâ, subtenui, corneâ; spirâ subelevatâ, propè apicem striatâ; suturis impressis; anfractibus senis, subconvexis; aperturâ parvâ, ellipticâ, infernè angulatâ, albidâ.

Shell obscurely plicate, conical, rather thin, horn colour; spire rather elevated, striate towards the apex; sutures impressed; whorls six, somewhat convex; aperture small, elliptical, angular at base, whitish.

Hab. Tenn. Dr. Troost.

My Cabinet, and Cabinet of Dr. Troost.

Diam. .26, Length .63 of an inch.

Remarks.—This species is remarkable for the impressed curve on the columella. In its general character it resembles the *M. blanda* herein described. The aperture is about one-third the length of the shell.

MELANIA BLANDA. Plate 6, Fig. 34.

Testâ plicatâ, conoideâ, subtenui, nitidâ, corneâ; spirâ subelevatâ, propè apicem striatâ; suturis impressis; anfractibus septenis, subplanulatis; aperturâ parvâ, ellipticâ, infernè angulatâ, albidâ.

Shell folded, conical, rather thin, shining, horn colour; spire rather elevated; towards the apex striate; sutures impressed; whorls seven, rather flattened; aperture small, elliptical, angular at the base, whitish.

Hab. Tenn. Dr. Troost.

My Cabinet, and Cabinet of Dr. Troost.

Diam. .26, Length .69 of an inch.

Remarks.—A single specimen of this species was received from Dr. Troost. The folds are obscure and the striæ small. The aperture is not quite one-third the length of the shell.

MELANIA CREBRI-COSTATA. Plate 6, Fig. 35.

Testâ crebri-plicatâ, conoideâ, subcrassâ, corneâ; spirâ elevatâ; suturis linearibus; anfractibus septenis, planulatis; aperturâ parvâ, ellipticâ, infernè angulatâ, cœruleâ.

Shell closely folded, conical, rather thick, horn colour; spire elevated; sutures linear; whorls seven, flattened; aperture small, elliptical, below angular, bluish.

Hab. Robinson County, Tenn. Dr. Currey.
My Cabinet, and Cabinet of Dr. Currey.
Diam. .28, Length .90 of an inch.

Remarks.—This is rather a slender shell, and is peculiar for its numerous folds, which are slightly curved and parallel. They extend over the whole shell, except the inferior half of the body whorl. The aperture is about one-third the length of the shell.

MELANIA CURREYANA. Plate 6, Fig. 36.

Testâ plicatâ, conoideâ, subcrassâ, corneâ; spirâ subelevatâ; suturis irregulariter impressis; anfractibus septenis, subconvexis; aperturâ parvâ, infernè angulatâ, intus purpuratâ.

Shell folded, conical, rather thick, horn colour; spire somewhat elevated; sutures irregularly impressed; whorls seven, rather convex; aperture small, angular below, purplish within.

Hab. Barren River, Ky. Dr. Currey.
My Cabinet, and Cabinet of Dr. Currey.
Diam. .27, Length .73 of an inch.

Remarks.—Two specimens of this species are before me, which I owe to the kindness of Dr. Currey of Nashville, after whom I name it. It is remarkable for its large and strong folds. It is without striæ, and the body whorl is smooth, except near to the suture. The aperture is about one-third the length of the shell. One of the specimens has quite a dark purple aperture, and the lip is thickened and reflexed. In these two specimens the ribs seem disposed to alternate in size.

MELANIA EDGARIANA. Plate 6, Fig. 37.

Testâ plicatâ, conoideâ, subtenui, striatâ, luteo-fuscâ; spirâ elevatâ; suturis irregulariter impressis; anfractibus octonis, subplanulatis; aperturâ parvâ, ellipticâ, infernè angulatâ, cœruleâ.

Shell folded, conical, rather thin, striate, yellowish brown; spire elevated; sutures irregularly impressed; whorls eight, rather flattened; aperture small, elliptical, angular below, bluish.

Hab. Cany Fork, Tenn. Mr. S. M. Edgar.
My Cabinet, and Cabinet of Mr. Edgar.
Diam. .29, Length .77 of an inch.

Remarks.—I owe to Mr. Edgar's kindness several specimens of this pretty species, which I name after him. It is remarkable for being folded and transversely striate on all the whorls, except the lower part of the body whorl, which is striate only. The crossing of the folds and striæ give it a cancellated appearance. The aperture is rather more than one-fourth the length of the shell. The number of striæ on the body whorl is about ten.

MELANIA DECORA. Plate 6, Fig. 38.

Testâ plicatâ, turrito-acutâ, subtenui, corneâ, supernè striatâ; spirâ acutâ, elevatâ; suturis impressis; anfractibus novenis, subplanulatis; aperturâ parvâ, ellipticâ, albidâ.

Shell folded, acutely turrited, rather thin, horn colour, above striate; spire acute, elevated; sutures impressed; whorls nine, rather flattened; aperture small, elliptical, whitish.

Hab. Tenn. Dr. Troost.
" Green River, Ky. Dr. Currey.
My Cabinet, and Cabinets of Dr. Troost and P. H. Nicklin.
Diam. .26, Length .82 of an inch.

Remarks.—This species resembles *M. costulata,* herein described. It is, however, more elevated in the spire, and the folds are closer. On the two lower whorls the folds become obsolete.

MELANIA COSTULATA. Plate 6, Fig. 39.

Testâ plicatâ, conoideâ, subtenui, luteâ, supernè carinatâ; spirâ subproductâ; suturis impressis; anfractibus novenis, subconvexis; aperturâ parvâ, subovatâ, intus cœruleâ.

Shell folded, conical, rather thin, yellow, above carinate; spire rather elongated; sutures impressed; whorls nine, rather convex; aperture small, sub-ovate, within bluish.

Hab. Barren River, Ky. Dr. Currey.
" Tenn. Dr. Troost.
My Cabinet, and Cabinets of Dr. Currey, Dr. Troost, and P. H. Nicklin.
Diam. .30, Length .82 of an inch.

Remarks.—In its general characters this species resembles *M. laqueata,* Say. It may be distinguished in its being of less diameter and being more slender.

The specimens received from both Dr. Troost and Dr. Currey, were covered with a deposite of the oxide of iron, giving them a black hue. Under this the epidermis is yellow. The aperture is about one-third the length of the shell.

MELANIA NITENS. Plate 6, Fig. 40.

Testâ plicatâ, subcrassâ, tenebroso-fuscâ; spirâ obtusâ; suturis impressis; anfractibus septenis, subconvexis; aperturâ parvâ, ellipticâ, ad basim angulatâ, intus subrufâ.

Shell folded, somewhat thick, dark brown; spire obtuse; sutures impressed; whorls seven, somewhat convex; aperture small, elliptical, angular at the base, reddish within.

Hab. Tenn. Dr. Troost.
My Cabinet, and Cabinet of Dr. Troost.
Diam. .30, Length .76 of an inch.

Remarks.—This is a shining, dark brown species, with rather regular ribs on the superior whorls. The aperture is about one-third the length of the shell. A single specimen only was received.

MELANIA PLICATULA. Plate 6, Fig. 41.

Testâ plicatâ, conoideâ, tenui, tenebroso-corneâ; spirâ subelevatâ; suturis impressis; anfractibus octonis, subconvexis, supernè striatis; aperturâ parvâ, ellipticâ, ad basim subangulatâ, intus albidâ.

Shell folded, conical, thin, dark horn colour; spire rather elevated; sutures impressed; whorls eight, rather convex, striate above; aperture rather small, elliptical, at the base somewhat angular, within whitish.

Hab. Tenn. Dr. Troost.
My Cabinet, and Cabinets of Dr. Troost and Mr. Edgar.
Diam. .35, Length .85 of an inch.

Remarks.—Dr. Troost and Mr. Edgar both procured this species from Tennessee, but their labels do not state the district. The ribs are numerous and close, and most individuals have two striæ above, which, crossing the ribs, produces a granulation. The mouth is about one-third the length of the shell.

MELANIA CONCINNA. Plate 6, Fig. 42.

Testâ plicatâ, turrito-acutâ, subtenui, fuscâ; spirâ exsertâ; suturis impressis; anfractibus novenis, carinatis, planulatis; aperturâ parvâ, ellipticâ, ad basim angulatâ, intus albidâ.

Shell folded, acutely turrited, thin, brown; spire drawn out; sutures impressed; whorls nine, carinate, flattened; aperture small, elliptical, angular at the base, whitish.

Hab. Tenn. Dr. Troost.

My Cabinet, and Cabinet of Dr. Troost.

Diam. .25, Length .75 of an inch.

Remarks.—A single individual only was received from Dr. Troost. Its mouth is about one-fourth the length of the shell. It is remarkably flattened on the whorls, and the superior part is transversely striate.

SECTION III.—CARINATE MELANIÆ.

MELANIA BABYLONICA. Plate 6, Fig. 43.

Testâ carinatâ, turritâ, subcrassa; spirâ subelevatâ, propè apicem striatâ; suturis impressis; anfractibus septenis, supernè angulatis; aperturâ subgrandi, ellipticâ, albâ.

Shell carinate, turrited, rather thick; spire rather elevated, striate at the apex; sutures impressed; whorls seven, angular above; aperture rather large, elliptical, white.

Hab. Yellow Springs, Green Co., Ohio. T. G. Lea.

My Cabinet.

Diam. .36, Length .78 of an inch.

Remarks.—A single specimen only of this shell has come under my notice. If the prominent character of this specimen, the large carina on the superior part of the whorls, be persistent, it marks a very distinct species. On the first four whorls, the striæ are well defined. On the remaining three the carina alone exists. The aperture is more than one-third the length of the shell.

MELANIA EXARATA. Plate 6, Fig. 44.

Testâ carinatâ, conica, subcrassâ, nigrâ; suturis exaratis; anfractibus planulatis, carinatis; aperturâ parvâ, ad basim angulatâ et canaliculatâ, intus tenebrosâ.

Shell carinate, conical, rather thick, black; sutures rather deeply grooved; whorls flattened, carinate; aperture small, at the base angular and channelled, dark within.

Hab. Tenn. Dr. Troost.

My Cabinet, and Cabinet of Dr. Troost.

Diam. .28, Length .57 of an inch.

Remarks.—I received only two specimens of this species, both of which are decollated. It is perfectly distinct, and remarkable for its jetty hue, its carina, and its deeply impressed sutures, which are caused by the carina.

MELANIA POTOSIENSIS. Plate 6, Fig. 45.

Testâ carinatâ, conoideâ, subtenui, fuscâ; spirâ obtuso-elevatâ; suturis valdè impressis; anfractibus octonis, convexis; aperturâ magnâ, ovatâ, purpuratâ.

Shell carinate, conical, rather thin, brown; spire obtusely elevated; sutures much impressed; whorls eight, convex; aperture large, ovate, purplish.

Hab. Potosi, Missouri. Dr. Troost.

My Cabinet, and Cabinet of Dr. Troost.

Diam. .28, Length .62 of an inch.

Remarks.—The rotundity of the outer lip in this is different from the species generally, with the same elevation of spire. The aperture is more than one-third the length of the shell, and is entirely purple, in the only two specimens before me. In one specimen the carina is distinct on all the whorls but the last, in the other it is not visible on the last two whorls.

MELANIA ACUTO-CARINATA. Plate 6, Fig. 46.

Testâ carinatâ, conoideâ, subcrassâ, nitidâ, tenebroso-fuscâ; spirâ obtuso-elevatâ; suturis impressis; anfractibus senis; aperturâ subgrandi, ellipticâ, infernè angulatâ, intus purpuratâ.

Shell carinate, conical, rather thick, shining, dark brown; spire obtusely elevated; sutures impressed; whorls six; aperture rather large, elliptical, angular at base, purplish within.

Hab. Tenn. Dr. Currey.

My Cabinet, and Cabinet of Dr. Currey.

Diam. .30, Length .66 of an inch.

Remarks.—I received a single specimen only of this species. It seems to be distinct in its large carina which extends over all the whorls, but it is scarcely distinct on the last. The columella is remarkably indented. The aperture is nearly one-half the length of the shell.

MELANIA WARDERIANA. Plate 6, Fig. 47.

Testâ carinatâ, clavæformi, subcrassâ, tenebrosâ; spirâ conicâ; suturis linearibus; anfractibus octonis, convexis; aperturâ ovata, subgrandi, intus carneâ.

Shell carinate, club-shaped, rather thick, very dark; spire conical; sutures linear; whorls eight, convex; aperture ovate, rather large, within flesh-colour.

Hab. Cedar Creek, a branch of Clinch River, Russell County. Virginia. J. A. Warder, M. D.

My Cabinet, and Cabinets of Dr. Warder, and T. G. Lea.

Diam. .37, Length .76 of an inch.

Remarks.—I have two specimens before me. The two lowest whorls are smooth. The superior ones are carinate, with a small intermediate stria. The upper whorls diminish very rapidly. The exterior of the shell is nearly black and shining, and its colour appears to arise from a deposite of ferruginous matter, as the substance of the shell is reddish. The aperture is rather more than one-third the length of the shell. I name it after Dr. Warder of Cincinnati, to whom I owe the possession of this and other interesting specimens.

SECTION IV.—SULCATE MELANIÆ.

MELANIA SULCOSA. Plate 6, Fig. 48.

Testâ transversè sulcatâ, conoideâ, crassâ, luteolâ; suturis impressis; anfractibus planulatis; aperturâ parvâ, ovatâ, albidâ.

Shell transversely sulcate, conical, thick, yellowish; sutures impressed; whorls flattened; aperture small, ovate, whitish.

Hab. Tenn. Dr. Troost.

My Cabinet, and Cabinet of Dr. Troost.

Diam. .32, Length . of an inch.

Remarks.—A single specimen only, and that imperfect, is before me. The body whorl has seven or eight distinctly marked striæ. On the penultimate there are three, and these give a sulcate appearance to the shell.

SECTION V.—STRIATE MELANIÆ.

MELANIA STRIATA. Plate 6, Fig. 49.

Testâ striatâ, conoideâ, subtenui, tenebroso-fuscâ, supernè carinatâ; spirâ subelevatâ; suturis impressis; anfractibus octonis, convexis; aperturâ parvâ, ellipticâ, intus subrufâ.

Shell striate, conical, rather thin, dark brown, carinate above; spire somewhat elevated; sutures impressed; whorls eight, convex; aperture small, elliptical, within reddish.

Hab. Tennessee. Dr. Troost.
My Cabinet, and Cabinet of Dr. Troost.
Diam. .21, Length .49 of an inch.

Remarks.—Rather a small species of a dark reddish brown. In some individuals the folds are numerous.—In others the striæ predominate and cover nearly all the whorls. The aperture is rather more than one-third the length of the shell.

MELANIA PILULA. Plate 6, Fig. 50.

Testâ striatâ, subglobosâ, crassâ, tenebroso-fuscâ; suturis subimpressis; anfractibus convexis; aperturâ ovatâ, magnâ, infrâ subangulatâ, intus purpuratâ.

Shell striate, subglobose, thick, dark brown; sutures somewhat impressed; whorls convex; aperture ovate, large, angular at the base, within purplish.

Hab. Tennessee. Dr. Troost.
My Cabinet, and Cabinet of Dr. Troost.
Diam. .34, Length .43 of an inch.

Remarks.—This is a very distinct species, and is quite as globose as *M. subglobosa*, Say. Two specimens were received, the spires of which are not perfect. I should presume, that when perfect, they would be found to have four whorls. The raised striæ are very distinct, and consist of eighteen in these two individuals. The aperture is about half the length of the shell. One specimen is dark purple within the aperture.—The other is bluish, with a tinge of purple on the columella.

MELANIA CIRCINCTA. Plate 6, Fig. 51.

Testâ supernè striatâ, turritâ, subtenui, pallido-luteâ, fasciata; spirâ exsertâ; suturis parvis; anfractibus novenis, subconvexis, in medio carinatis; aperturâ subparvâ, ellipticâ, ad basim angulatâ, intus albâ.

Shell striate above, turrited, rather thin, pale yellow, banded; spire drawn out; sutures small; whorls nine, slightly convex, carinate in the middle; aperture rather small, elliptical, angular at the base, and white within.

Hab. Tenn. Dr. Troost.

My Cabinet, and Cabinet of Dr. Troost.

Diam. .35, Length .90 of an inch.

Remarks.—This beautiful species is peculiar for its pale yellow ground and broad band, which is placed immediately upon the carina. A very indistinct band may be observed below the carina, where in some individuals may also be observed a few striæ. In some, the striæ on the superior part of the shell are accompanied by indistinct ribs.

SECTION VI.—TUBERCULATE MELANIÆ.

MELANIA VENUSTA. Plate 6, Fig. 52.

Testâ supernè subtuberculatâ, fusiformi, subtenui, luteolâ; spirâ subobtusâ; suturis rugoso-impressis; anfractibus senis, convexis; aperturâ productâ, ad basim angulatâ et canaliculatâ, intus albidâ.

Shell disposed to be tuberculate, fusiform, somewhat thin, yellowish above; spire rather obtuse; sutures roughly impressed; whorls six, convex; aperture elongated, at the base angulated and channelled, within whitish.

Hab. Tenn. Dr. Troost.

My Cabinet, and Cabinet of Dr. Troost.

Diam. .43, Length .80 of an inch.

Remarks.—Dr. Troost sent me a single specimen of this species which is very distinct. The columella is very much thickened, particularly above, in which it resembles the genus *Melanopsis.* The aperture is rather more than half the length of the shell. In this specimen a single obscure band may be observed within, close to the base of the columella.

MELANIA FLORENTIANA. Plate 6, Fig. 53.

Testâ tuberculatâ, ellipticâ, ponderosâ, pallidâ; spirâ obtusâ; suturis impressis; anfractibus senis, subconvexis; aperturâ productâ, albidâ.

Shell tuberculate, elliptical, ponderous, pale; spire obtuse; sutures impressed; whorls six, slightly convex; aperture elongated, whitish.

Hab. Tennessee River, Florence, Alabama. T. R. Dutton.
My Cabinet, and Cabinet of Mr. Dutton.
Diam. .47, Length .87 of an inch.

Remarks.—An elliptical species resembling the *M. olivula,* Conrad. Its aperture is so much elongated as to be more than half the length of the shell. Three of the specimens are without bands, a fourth has several very indistinct ones. The whorls are somewhat flattened on the superior part and are disposed to be tuberculated below the sutures. In the young the tubercles are more distinct. In some of the adult specimens they are entirely wanting.

MELANIA DUTTONIANA. Plate 6, Fig. 54.

Testâ tuberculatâ, fusiformi, subcrassâ, luteolâ, fasciatâ; spirâ elevatâ, ad apicem acutâ; suturis enormiter lineatis; anfractibus septenis, supernè depressis; aperturâ productâ, ad basim angulatâ et canaliculatâ, intus albidâ.

Shell tuberculate, fusiform, rather thick, yellowish, banded; spire elevated, pointed at the apex; sutures irregularly lined; whorls seven, depressed above; aperture elongated, angular and channelled at the base, within whitish.

Hab. Waters of Tennessee. Dr. Troost. Duck River, Maury Co., Tenn. T. R. Dutton.
My Cabinet, and Cabinets of Prof. Troost and Mr. Dutton.
Diam. .57, Length 1.09 of an inch.

Remarks.—This is a beautiful species. The most perfect specimens are remarkable for their fusiform shape and their long aperture, which presents a curved columella and extended sinus somewhat like the genus *Io.* The bands in some individuals are numerous and distinct, the largest being nearest the base. The tubercles form a row round the middle of the whorls of most specimens, but in some, though rarely, this part is carinate or rounded. Some are slightly tuberculated below the suture. Among the young specimens some are costate near the apex, others entirely smooth and without bands. I owe the fine specimen figured to Mr. Dutton, after whom I name it.

SECTION VII.—GRANULATE MELANIÆ.

MELANIA HOLSTONIA. Plate 6, Fig. 55.

Testâ granosâ, conoideâ, subcrassâ, nigrâ; spirâ subelevatâ; suturis impressis; anfractibus supernè planulatis; aperturâ ovatâ, purpureâ.

Shell grained, conical, somewhat thick, black; spire somewhat elevated; sutures impressed; whorls flattened above; aperture ovate, purple.

Hab. Tenn. Dr. Troost. Holston River, Tenn. Mr. S. M. Edgar.
My Cabinet, and Cabinets of Dr. Troost and Mr. Edgar.
Diam. .38, Length .79 of an inch.

Remarks.—A very distinct species with four series of small, rather sharp elevations round the whorls, the two inferior ones rather indistinct. Only two specimens have come under my notice, and both have the apex decollated.

SECTION VIII.—CANCELLATE MELANIÆ.

MELANIA CALIGINOSA. Plate 6, Fig. 56.

Testâ cancellatâ, conoideâ, subcrassâ, transversè striatâ, tenebroso-fuscâ; spirâ elevatâ; suturis enormiter impressis; anfractibus octonis, subconvexis; aperturâ parvâ, ellipticâ, intus purpuratâ.

Shell cancellate, conical, somewhat thick, transversely striated, very dark brown; spire elevated; sutures irregularly impressed; whorls eight, rather convex; aperture small, elliptical, purplish within.

Hab. Tenn. Dr. Troost.
My Cabinet, and Cabinets of Dr. Troost and P. H. Nicklin.
Diam. .34, Length .91 of an inch.

Remarks.—A fine cancellate species with ten or eleven revolving striæ on the body whorl, crossing the folds. The aperture is about one-third the length of the shell. It nearly answers to Mr. Conrad's description of *M. nassula*, but has five striæ on the penultimate whorl while the *nassula* has seven. It differs from *M. catenaria*, Say, in having a more elevated spire, and in having two or three more revolving striæ. In some individuals the aperture is bluish white.

MELANIA NODULOSA. Plate 6, Fig. 57.

Testâ cancellatâ, conoideâ, crassâ, tenebroso-fuscâ; suturis enormiter impressis; anfractibus subconvexis; aperturâ subgrandi, ellipticâ, infrâ subangulatâ, intus cœruleâ.

Shell cancellate, conical, thick, dark brown; sutures irregularly impressed; whorls somewhat convex; aperture rather large, elliptical, subangular below, within bluish.

Hab. Tenn. Dr. Troost.
My Cabinet, and Cabinet of Dr. Troost.
Diam. .34, Length .82 of an inch.

Remarks.—Two imperfect specimens only were received from Dr. Troost, and both are much eroded at the apex, consequently the number of whorls could not be ascertained. The body whorl has about twenty well defined raised striæ, which on the superior part are crossed by folds causing numerous elevated points, giving the whole of the upper part of the shell a granulate appearance. It is somewhat like *M. catenaria*, Say, but may be distinguished at once by the number of striæ.

Read December 21st, 1838.

MELANIA CINCINNATIENSIS. Plate 6, Fig. 58.

Testâ carinatâ, valdè depressâ, infernè compressâ, fuscâ, trifasciatâ, bicarinatâ, apice acuminatâ; anfractibus quaternis; aperturâ subrotundâ.

Shell carinate, much depressed, below compressed, brown, three-banded, with two carinæ, pointed at the apex; whorls four; aperture rounded.

Hab. Near Cincinnati, Ohio. T. G. Lea.
My Cabinet, and Cabinet of T. G. Lea.
Diam. .14, Length .16 of an inch.

Remarks.—This is a very minute species recently taken in the vicinity of Cincinnati,* by my brother T. G. Lea. It is very remarkable for its roof-shaped spire, and two carinæ, which are coloured.

Read October 2d, 1840.

When I presented my last paper on the family *Naïades* to the society, I considered that but few species remained to be described, and I intended to have turned my attention almost exclusively to the anatomical structure of the various species attainable. Circumstances have disappointed this intention, and the number of new species has, owing to the kind attention of many friends, increased upon my hands far beyond my expectations. Descriptions of these are now made out, and many of them will be found of great interest to the student of this branch of Zoology.

UNIO EXIGUUS. Plate 7, Fig. 1.

Testâ ellipticâ, subcompressâ; valvulis tenuibus; natibus subprominentibus; epidermide tenebrosâ, virido-radiatâ, politâ; dentibus cardinalibus lamellatis; lateralibus longis subcurvisque; margaritâ cœruleâ et iridescente.

Shell oval, rather compressed; valves thin; beaks somewhat prominent; epidermis dark, with green rays, polished; cardinal teeth lamellar; lateral teeth long and somewhat curved; nacre blue and iridescent.

Hab. Chatahochee River, Columbus, Georgia. Dr. Boykin.
My Cabinet.
Diam. .6, Length .1, Breadth 1.7 of an inch.

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* More recently found by Dr. Troost in the Holston, Tennessee.

Shell oval, rather compressed; substance of the shell very thin and transparent; beaks somewhat prominent; ligament long and thin; epidermis polished, dark, the whole disk being nearly covered with deep green rays; cardinal teeth lamellar, erect, pointed; lateral teeth long, lamellar and somewhat curved; anterior cicatrices distinct; posterior cicatrices confluent; dorsal cicatrices placed across the cavity of the beaks; cavity of the shell shallow; cavity of the beaks shallow and somewhat angular; nacre blue and very iridescent behind.

Remarks.—This species is nearly allied to *U. iris* (nobis.) Like it, it has numerous green rays passing over the whole disk, more dense on the posterior portion. It differs in being less transverse and being apparently without undulations at the beaks, those of the *iris* being remarkable. The cardinal tooth in the left valve is but slightly cleft, and the anterior portion is more elevated and pointed.

UNIO CUCUMOIDES. Plate 7, Fig. 2.

Testâ plicatâ, emarginatâ, latissimâ, subcylindraceâ; valvulis subcrassis; natibus vix prominentibus; epidermide nigrâ; dentibus cardinalibus parvis, tuberculatis; lateralibus longissimis rectisque; margaritâ albâ.

Shell folded, emarginate, very broad, somewhat cylindrical; valves rather thick; beaks scarcely prominent; epidermis black; cardinal teeth small, tuberculate; lateral teeth very long and straight; nacre white.

Hab. Hunter's River, New South Wales. Dr. Jay.
Cabinet of Dr. Jay.

Diam. 1.4, Length 2.2, Breadth 5.5 inch.

Shell folded over the posterior half, emarginate at base, very broad, somewhat cylindrical, subbiangular behind; folds small and numerous; substance of the shell rather thick, thinner behind; beaks scarcely prominent and placed near to the anterior margin; ligament very long and thick; epidermis black; cardinal teeth small, tuberculate; lateral teeth very long and straight; anterior cicatrices confluent; posterior cicatrices confluent; dorsal cicatrices placed in a row across the centre of the cavity of the beaks; cavity of the shell deep and rounded; cavity of the beaks very small; nacre white.

Remarks.—This is among the most remarkable species of Unio which have come under my notice. It resembles *U. monodontus*, (Say) in outline as well as in the imperfection of the cardinal and lateral teeth, both of which, however, are more perfect in the *U. cucumoides*. In the specimen before me there is a deep muscular impression above and distinct from the great anterior cicatrix. This is nearly round and penetrates the base of the cardinal tooth. It may be that it is formed by a branch of the anterior adductor muscle. An examination of the animal only can decide this point. In the above description it will be observed that the anterior cicatrices are described as being confluent. This alludes to the cicatrices of the adductor muscle and the muscle of locomotion as usual. The third cicatrix of the anterior part is now, I believe, for the first time observed. The dorsal and basal margin are nearly parallel. The nacre is stained with epidermal matter as it usually is in shells of this form.

This specimen was kindly lent to me for description by Dr. Jay, who received but a single one from Sidney, New South Wales. In its general form and tuberculate exterior it resembles a cucumber.

UNIO CUNEOLUS. Plate 7, Fig. 3.

Testâ triangulari, compressâ, valdè inæquilaterali; valvulis subcrassis; natibus elevatis; epidermide luteâ, striatâ, radiis maculatis; dentibus cardinalibus parvis; lateralibus longis rectisque; margaritâ albâ et iridescente.

Shell triangular, compressed, very inequilateral; valves rather thick; beaks elevated; epidermis yellow, striate, with spotted rays; cardinal teeth small; lateral teeth long and straight; nacre white and iridescent.

Hab. Holston River, Tenn. Mr. S. M. Edgar.
My Cabinet, and Cabinets of Mr. Edgar and Dr. Currey.
Diam. .6, Length 1, Breadth 1.4 inches.

Shell triangular, compressed, flattened on the sides, very inequilateral; substance of the shell thick before, thinner behind; beaks elevated; ligament short and thin; epidermis yellow, striate, with numerous green interrupted rays over the whole disk; cardinal teeth small, single in the right valve and double in the left; lateral teeth long and straight; anterior cicatrices distinct; posterior cicatrices distinct; dorsal cicatrices placed on the under side of the cardinal tooth, cavity of the shell small: cavity of the beak angular and rather deep; nacre white and very iridescent.

Remarks.—I have before me two specimens of this species brought by Mr. Edgar from Tennessee. In form and size it approaches the *U. Barnesianus* (nobis,) but is more triangular, more flattened on the sides and has the marks of growth closer.

UNIO CINCINNATIENSIS. Plate 8, Fig. 4.

Testâ nodosâ, quadratâ, inflatâ, emarginatâ, inæquilaterali; valvulis crassis; natibus elevatis; epiderdime luteâ, valdè radiatâ; dentibus cardinalibus subgrandibus; lateralibus sublongis rectisque; margaritâ albâ.

Shell nodulous, quadrate, inflated, emarginate, inequilateral; valves thick; beaks elevated; epidermis yellow, much rayed; cardinal teeth rather large; lateral teeth rather long and straight; nacre white.

Hab. Ohio River at Cincinnati. T. G. Lea.

My Cabinet, and Cabinet of T. G. Lea.

Diam. 1.2, Length 1.5, Breadth 1.9 inches.

Shell with a row of nodules from the beak to the basal margin, quadrate, inflated, emarginate at basal and posterior margins, inequilateral; substance of the shell very thick, thinner before; beaks large and elevated; ligament short and thin; epidermis yellow, with numerous green capillary rays over the whole disk; cardinal teeth rather large, double in both valves; lateral teeth rather long, thick and straight; anterior cicatrices distinct; posterior cicatrices confluent: dorsal cicatrices placed on the under side of the cardinal tooth; cavity of the shell rather deep; cavity of the beak small and angular; nacre milky white.

Remarks.—This is a very rare species. A very imperfect specimen was sent to me by my brother more than ten years since. I then thought that it might be a variety of the species which I afterwards called *U. perplexus.* Since then I have seen seven specimens, and their constant difference from the *perplexus* clearly marks their specific distinction. It is very closely allied to another species described by Mr. Conrad under the name of *U. Phillipsii.* It differs from it, however, in having the tubercles in a more regular manner arranged over the medial part of the disk.

The rays are so numerous in some specimens as to give a dark green hue to the whole disk, except at the anterior margin, where it is always more or less yellow. The umbonial slope is elevated, and in some individuals disposed to be tuberculate.

UNIO STONENSIS. Plate 8, Fig. 5.

Testâ ellipticâ, valdè compressâ, planulatâ, valdè inæquilaterali; valvulis crassis; natibus prominulis, ad apices undulatis; epidermide luteo-fuscâ; dentibus cardinalibus parvis; lateralibus longis, crassis curvisque; margaritâ salmonis colore tinctâ et iridescente.

Shell oval, very much compressed, flat-sided, very inequilateral; valves thick; beaks slightly prominent, undulated at the tip; epidermis yellowish-brown; cardinal teeth small; lateral teeth long, thick and curved; nacre salmon-coloured and iridescent.

Hab. Stone's River, Tenn. S. M. Edgar.
My Cabinet.

Diam. .1, Length 1.9, Breadth 3.3 inches.

Shell oval, very much compressed, flat-sided, very inequilateral; biangular behind; substance of the shell thick; beaks slightly prominent and minutely undulate at tip; ligament long and thick; epidermis yellowish-brown, roughly striate; cardinal teeth small, striate, lobed; lateral teeth long, curved and thick; anterior cicatrices distinct; posterior cicatrices confluent; dorsal cicatrices placed in a row behind the cardinal tooth; cavity of the shell very shallow; cavity of the beaks scarcely perceptible; nacre salmon-coloured and iridescent.

Remarks.—This fine shell seems to be pretty closely allied to *U. gibbosus*, Barnes. It is, however, a less transverse species, more compressed and more equilateral. The nacre is very fine and in this specimen salmon-coloured,—this tint may not prove to be permanent. Having but a single specimen before me, I am unable to say whether it occurs rayed. This individual is entirely without rays. The transverse striæ are rough.

UNIO LESUEURIANUS. Plate 8, Fig. 6.

Testâ subrotundâ, subinflatâ; valvulis crassis; natibus prominentibus; epidermide fuscâ, striatâ, radios maculatos habente; dentibus cardinalibus subgrandibus; lateralibus parvis rectisque; margaritâ albâ et iridescente.

Shell nearly round, somewhat inflated; valves thick; beaks prominent; epidermis brown, striate with spotted rays; cardinal teeth rather large; lateral teeth small and straight; nacre white and iridescent.

Hab. Cany Fork and Holston Rivers, Tenn. S. M. Edgar.
My Cabinet, and Cabinet of Mr. Edgar.

Diam. .7, Length 1.3, Breadth 1.5 inches.

Shell nearly round, somewhat inflated; substance of the shell thick, thinner behind; beaks prominent; ligament rather long and thin; epidermis brown, striate, with several interrupted rays over the umbones; lines of growth approximate; cardinal teeth rather large, single in the right and double in the left valve; lateral teeth small and straight; anterior cicatrices distinct; posterior cicatrices distinct; dorsal cicatrices placed under the cardinal tooth; cavity of the shell rather deep and rounded; cavity of the beaks deep and angular; nacre white and iridescent.

Remarks.—Two specimens only of this species were brought by Mr. Edgar. It seems to be most nearly allied to *U. subrotundus* (nobis;) but differs in the rays, in being less polished, in being less inflated and particularly in having the marks of growth more approximate, and more numerous.

I name this shell after the distinguished naturalist and companion of Peron, my old friend C. A. Lesueur.

UNIO DACTYLUS. Plate 9, Fig. 7.

Testâ transversâ, subinflatâ; valvulis tenuibus; natibus prominulis; epidermide luteâ; dentibus cardinalibus minimis, erectisque; lateralibus longis subcurvisque; margaritâ albâ et iridescente.

Shell transverse, rather inflated; valves thin; beaks somewhat prominent; epidermis yellow; cardinal teeth very small and erect; lateral teeth long and rather curved; nacre white and iridescent.

Hab. Cany Fork River, Tenn. S. M. Edgar.
My Cabinet, and Cabinet of Mr. Edgar.

Diam. .6, Length .1, Breadth 1.9 inches.

Shell triangular, inflated, narrow-elliptical; substance of the shell thin, thicker before; beaks somewhat prominent; ligament rather long and thin; epidermis yellow; umbonial slope rounded; cardinal teeth very small, erect, pointed in the left valve, the anterior lobe being much the highest; lateral teeth long and rather curved; anterior cicatrix distinct; posterior cicatrix confluent; dorsal cicatrix placed in the centre of the cavity of the beaks; cavity of the shell rather deep and rounded; cavity of the beaks very shallow; nacre white and very iridescent at the posterior margin.

Remarks.—A single specimen only of this shell came in the collection from Mr. Edgar. It has no remarkable characteristics, yet it cannot be referred to any species known to me. It has some resemblance to *U. pictorum*, Lam., and is somewhat like *U. lanceolatus* (nobis,) but may be easily distinguished from both these species. I presume it is always without rays,—the individual before me having no trace of them.

UNIO BIANGULATUS. Plate 9, Fig. 8.

Testâ obovatâ, inflatâ, posticè biangulari; valvulis tenuibus; natibus subprominentibus; epidermide tenebroso-fuscâ; radiatâ; dentibus cardinalibus subgrandibus, elevatis; lateralibus subgrandibus curvisque; margaritâ albâ et iridescente.

Shell obovate, inflated, biangular behind; valves thin; beaks rather prominent; epidermis dark brown, rayed; cardinal teeth rather large, elevated; lateral teeth rather large and curved; nacre white and iridescent.

Hab. Cany Fork River, Tenn. Prof. Troost and Mr. S. M. Edgar.
My Cabinet, and Cabinets of R. O. Currey, M. D., Mr. Edgar and Prof. Troost.
Diam. 1.2, Length 1.8, Breadth 2.8 inches.

Shell obovate, inflated, biangular behind; substance of the shell thin, thicker before; beaks rather prominent, approximating the anterior margin; ligament rather long and thick; epidermis dark brown, sometimes yellowish, with indistinct interrupted rays on the posterior portion; umbonial slope subangular; posterior slope with an imperfect fold which makes a second angle; cardinal teeth rather large, erect, pointed, double in the left valve and single in the right; lateral teeth rather large and curved, lamellar near the termination; anterior cicatrices distinct; posterior cicatrices confluent; dorsal cicatrices large and placed on the upper side of the cavity of the beaks; cavity of the shell large; cavity of the beaks rather deep and angular; nacre white and iridescent.

Remarks.—When the specimen is entirely perfect, the double angle of the posterior margin marks this shell very distinctly. It has some resemblance to a young *U. perdix* (nobis.) The nacre is very pearly and very thin, leaving a broader margin than usual. Three specimens out of four before me have interrupted rays indistinctly painted on the posterior part of the shell.

UNIO STRIGOSUS. Plate 9, Fig. 9.

Testâ transversâ, compressâ, valdè inæquilaterali, posticè biangulatâ; valvulis subtenuibus; natibus subprominentibus, compressis; epidermide tenebroso-fuscâ; dentibus cardinalibus parvulis; lateralibus longis subrectisque; margaritâ purpureâ et iridescente.

Shell wide, compressed, very inequilateral, biangular behind; valves rather thin; beaks somewhat prominent, compressed; epidermis dark brown; cardinal teeth very small; lateral teeth long and nearly straight; nacre purple and iridescent.

Hab. Chattahoochee River, Columbus, Georgia. Dr. Boykin.
My Cabinet.

Diam. .5, Length .1, Breadth 2.2 inches.

Shell wide, compressed, very inequilateral, biangular behind; substance of the shell rather thin; beaks somewhat prominent, compressed; ligament long and thin; epidermis dark brown; cardinal teeth very small and lobed; lateral teeth long and nearly straight; anterior cicatrices distinct; posterior cicatrices confluent; dorsal cicatrices placed on the plate over the cavity of the beaks; cavity of the shell very shallow; cavity of the beaks scarcely perceptible; nacre purple and iridescent.

Remarks.—This species belongs properly to the group of which the *U. complanatus*, Soland, is the type. In outline it resembles *U. angustatus* (nobis,) but is a more compressed species. Two individuals only were received, one of which is nearly white in the nacre. The cardinal teeth are remarkably small, and, in the oldest specimen, stand nearly in the direction of the lateral teeth.

UNIO TENER. Plate 10, Fig. 10.

Testâ ellipticâ, valdè compressâ, valdè inæquilaterali; valvulis tenuibus; natibus subprominentibus; epidermide luteo-fuscâ; dentibus cardinalibus parvis; lateralibus longis subcurvisque; margaritâ albâ et iridescente.

Shell elliptical, much compressed, very inequilateral; valves thin; beaks rather prominent; epidermis yellowish brown; cardinal teeth small; lateral teeth long and rather curved; nacre white and iridescent.

Hab. Big Pigeon River, Tenn. S. M. Edgar.
My Cabinet.

Diam. .7, Length 1.3, Breadth 2.1 inches.

Shell elliptical, much compressed, very inequilateral, subbiangulate behind; substance of the shell thin, thicker before; beaks rather prominent; ligament long and thin; epidermis yellowish brown and obscurely rayed; cardinal teeth small, single in the right and double in the left valve; lateral teeth long and rather curved; anterior cicatrices distinct; posterior cicatrices confluent; dorsal cicatrices placed under the plate between the lateral and cardinal teeth; cavity of the shell very shallow; cavity of the beaks very shallow and angular; nacre white and very iridescent on the posterior part.

Remarks.—A single specimen only of this species was taken by Mr. Edgar. In outline it nearly resembles *U. radiatus*, but is a thinner and flatter shell and with very indistinct rays.

UNIO TENNESSEENSIS. Plate 10, Fig. 11.

Testâ ellipticâ, transversâ, inflatâ; valvulis crassis; natibus subprominentibus; epidermide luteâ; dentibus cardinalibus magnis erectisque; lateralibus magnis subcurvisque; margaritâ albâ et iridescente.

Shell elliptical, wide, inflated; valves thick; beaks rather prominent; epidermis yellow; cardinal teeth large and erect; lateral teeth large and somewhat curved; nacre white and iridescent.

Hab. Stone's River, Tenn. S. M. Edgar.
My Cabinet.

Diam. 1.3, Length 1.9, Breadth 3 inches.

Shell elliptical, wide, inflated, more full over the umbonial slope; substance of the shell thick, thinner on the posterior portion; beaks rather prominent; ligament rather long; epidermis yellow, without rays, and coarsely wrinkled; umbonial slope very round; cardinal teeth large, erect, pointed, double in the left valve and single in the right; lateral teeth large, rather long, slightly curved and separated from the cardinal teeth; anterior cicatrices distinct; posterior cicatrices distinct; dorsal cicatrices large and placed in the centre of the cavity of the beaks; cavity of the shell deep and rounded; cavity of the beaks small; nacre very white and iridescent at the posterior portion.

Remarks.—This is remarkable for its perfectly elliptical margin, its white nacre and roundness of the umbonial slope. It has somewhat the aspect of *U. stramineus* (Conrad) but differs from it in being a more perfect ellipse, in having less polish, and in the wrinkles being larger and more regular. It was taken by Mr. Edgar in Stone's River near Nashville, and I owe to that gentleman's kindness the specimen described.—The beaks in this are eroded, but they are perfect enough to present an appearance of radiate folds diverging from the tip of the beaks, like *U. delodontus* Lam. (*lacteolus*, Lea, Trans. Am. Phil. Soc. Vol. 5, page 8, Fig. 19,) and other South American species. Should these folds be found really to exist, when perfect specimens are had, this species will exhibit the only case yet observed among our *Uniones* with that character which is so common to those of South America.

UNIO AMŒNUS. Plate 10, Fig. 12.

Testâ ellipticâ, subcompressâ, valdè inæquilaterali; valvulis subcrassis; natibus subprominentibus; epidermide tenebrosâ, densè radiatâ; dentibus cardinalibus parvis, erectisque; lateralibus longis subcurvisque; margaritâ albâ et iridescente.

Shell elliptical, somewhat compressed, very inequilateral; valves rather thin; beaks somewhat prominent; epidermis dark, very much radiate; cardinal teeth small and erect; lateral teeth long and curved; nacre white and iridescent.

Hab. Holston River, Tenn. S. M. Edgar.
My Cabinet.

Diam. .7, Length 1.1, Breadth 1.9 inches.

Shell elliptical, somewhat compressed, very inequilateral, sub-emarginate at base; substance of the shell rather thick, thinner behind; beaks somewhat prominent; ligament rather long and thin; epidermis dark, with numerous green rays over nearly the whole disk; cardinal teeth small, double in both valves, erect and pointed; lateral teeth long and curved; anterior cicatrices distinct; posterior cicatrices confluent; dorsal cicatrices placed in the centre of the cavity of the beaks; cavity of the shell shallow; cavity of the beaks shallow and angular; nacre very pearly and iridescent.

Remarks.—A single specimen only of this species was taken by Mr. Edgar. It perhaps most nearly resembles *U. Medellinus* (nobis,) and *U. radiatus.* It is smaller and more transverse than the latter. Its pearly lustre is unusually fine. —In the individual before me the rays are thick and large.

UNIO OBTUSUS. Plate 11, Fig. 13.

Testâ obovatâ, inflatâ, posticè rotundatâ; valvulis subcrassis; natibus subprominentibus; epidermide luteâ, nitida; dentibus cardinalibus subgrandibus; lateralibus longis subrectisque; margaritâ albâ et iridescente.

Shell obovate, inflated, rounded behind; valves rather thick; beaks rather prominent; epidermis yellow, shining; cardinal teeth rather large; lateral teeth long and nearly straight; nacre white and iridescent.

Hab. Chattahoochee River, Columbus, Georgia. Dr. Boykin.
My Cabinet.

Diam. .9, Length 1.3, Breadth 2.2 inches.

Shell obovate, inflated, rounded behind; substance of the shell rather thick; beaks rather prominent; ligament rather short and thin; epidermis smooth, shining, yellow over the whole disk except on the posterior slope, which is dark brown; cardinal teeth rather large, double in both valves, erect, pointed; lateral teeth long and nearly straight; anterior cicatrices distinct; posterior cicatrices confluent; dorsal cicatrices on the plate near to the cardinal tooth; cavity of the shell deep and rounded; cavity of the beaks rather deep and angular; nacre white and beautifully iridescent.

Remarks.—Three specimens of this species now under my examination differ but little from each other. The nacre of one on the posterior part is golden and very rich. This specimen has an indistinct ray upon it, the others are rayless, having a rich yellow surface. It has some resemblance to *U. cariosus*, Say, but is a more transverse shell, and differs in having the posterior slope entirely dark, while the *cariosus* is usually rayed on this part.

UNIO FATUUS. Plate 11, Fig. 14.

Testâ transversâ, compressâ, emarginatâ; valvulis subcrassis; natibus parvis; epidermide subviridi, radiatâ; dentibus cardinalibus parvis; lateralibus longis, subcurvisque; margaritâ albâ et iridescente.

Shell wide, compressed, emarginate; valves rather thick; beaks small; epidermis greenish, radiated; cardinal teeth small; lateral teeth long and somewhat curved; nacre white and iridescent.

Hab. Holston River, Tennessee. Dr. Currey.
My Cabinet, and Cabinet of Dr. Currey.

Diam. .8, Length 1.3, Breadth 2.7 inches.

Shell wide, compressed, emarginate; substance of the shell thin behind and thicker before; beaks small, rather compressed and placed near to the anterior margin; ligament long and thin; epidermis greenish with numerous obscure rays over the whole disk; umbonial slope rounded; cardinal teeth small, pointed, double in the left valve and single in the right; lateral teeth long, somewhat curved, separated from the cardinal teeth; anterior cicatrices distinct; posterior cicatrices confluent; dorsal cicatrices nearly in the centre of the cavity of the beaks; cavity of the shell very shallow; cavity of the beaks very small; nacre white and iridescent.

Remarks.—This species has somewhat the aspect of a large *U. iris* (nobis,) and the outline of a young *U. subtentus* (Say.) The beaks are placed very near to the anterior margin. A single specimen came into my possession. More perfect ones may be found to possess more beautiful rays.

Unio Geddingsianus. Plate 11, Fig. 15.

Testâ ellipticâ, subinflatâ; valvulis subtenuibus; natibus prominulis; epidermide fuscâ, radiatâ; dentibus cardinalibus compressis erectisque; lateralibus longis rectisque; margaritâ albâ vel salmonis colore tinctâ.

Shell elliptical, somewhat inflated; valves rather thin; beaks somewhat prominent; epidermis brown, radiated; cardinal teeth compressed and erect; lateral teeth long and straight; nacre white or salmon-coloured.

Hab. Congaree River, South Carolina. Prof. Ravenel.
My Cabinet, and Cabinet of Prof. Ravenel.

Diam. .8, Length 1.3, Breadth 2.4 inches.

Shell elliptical, somewhat inflated, biangulate behind; substance of the shell rather thin; beaks somewhat prominent; ligament long and thin; epidermis brown with numerous dark green rays over the whole disk; cardinal teeth compressed, elevated, deeply divided in the left valve; lateral teeth very long and straight; anterior cicatrices distinct; posterior cicatrices confluent; dorsal cicatrices placed under the plate between the cardinal and lateral teeth; cavity of the shell rather shallow; cavity of the beaks small and somewhat angular; nacre white or salmon-coloured.

Remarks.—Professor Ravenel sent me two specimens of this species some time since. I have delayed describing it under the impression that it might prove to be only a variety of *confertus* (nobis.) After a careful examination, however, it appears to me to be distinct, and I propose to give it the name of my friend Prof. Geddings of Charleston. It is a more transverse shell than *confertus*, is less inflated, and less elevated on the umbonial slope. The older specimen is partly salmon-coloured, the younger white in the nacre.

UNIO STRIATUS. Plate 12, Fig. 16.

Testâ ellipticâ, compressâ; valvulis tenuibus; natibus subprominentibus; epidermide striatâ, rubiginis colore; dentibus cardinalibus parvis; lateralibus sublongis subrectisque; margaritâ salmonis colore tinctâ et iridescente.

Shell elliptical, compressed; valves thin; beaks rather prominent; epidermis striate, rust-coloured; cardinal teeth small; lateral teeth rather long and nearly straight; nacre salmon-coloured and iridescent.

Hab. Chattahoochee River, Columbus, Georgia. Dr. Boykin.
My Cabinet.

Diam. .3, Length .9, Breadth 1.3 inches.

Shell elliptical, compressed; substance of the shell thin, thicker behind; beaks rather prominent; epidermis striate in thin laminæ; ligament short and thin; cardinal teeth small, double in the left valve and single in the right; lateral teeth rather long and nearly straight; anterior cicatrices distinct; posterior cicatrices distinct; dorsal cicatrices very small and placed nearly under the cardinal tooth; cavity of the shell shallow; cavity of the beaks very shallow and nearly angular; nacre salmon-coloured, more intense under the beaks, iridescent.

Remarks.—A small species having some resemblance to *U. Ravenelianus*, (nobis,) but not so thick, and more transverse. It is remarkable for the close laminæ of the epidermis which give the whole disk (except at the beaks) a rough appearance. The epidermis is lighter about the beaks.

UNIO TORTIVUS. Plate 12, Fig. 17.

Testâ ellipticâ, compressâ, emarginatâ; valvulis subtenuibus; natibus subprominentibus, compressis; epidermide tenebroso-fuscâ, striatâ; dentibus cardinalibus parvulis; lateralibus longis curvisque; margaritâ purpureâ et iridescente.

Shell elliptical, compressed, emarginate; valves rather thin; beaks somewhat prominent, compressed; epidermis dark brown, striate; cardinal teeth very small; lateral teeth long and curved; nacre purple and iridescent.

Hab. Chattahoochee River, Columbus, Georgia. Dr. Boykin.
My Cabinet.

Diam. .6, Length .1, Breadth 1.9 inches.

Shell elliptical, compressed, emarginate at base; substance of the shell rather thin; beaks somewhat prominent, compressed; ligament rather long and thin; epidermis dark brown, striate; cardinal teeth very small and lobed; lateral teeth long and curved; anterior cicatrices distinct; posterior cicatrices confluent; dorsal cicatrices placed in the centre of the cavity of the beaks; cavity of the shell very shallow; cavity of the beaks very shallow; nacre purple and iridescent.

Remarks.—This species belongs to that group of which the *U. complanatus*, may be considered the type, the nacre of which is usually purple, but sometimes white and salmon. The four specimens which are before me have all more or less purple, one being deeply coloured with it and tinged with purple, while another is almost white. It differs from the *complanatus* in being more compressed and in having a very small cardinal tooth. It is also a much smaller species. At the posterior margin there is a disposition to bi-angulation.

UNIO LENIOR. Plate 12, Fig. 18.

Testâ obovatâ, inflatâ; valvulis tenuibus; natibus vix prominentibus, ad apices undulatis; epidermide luteâ, densissimè radiatâ; dentibus cardinalibus compressis; lateralibus parvis; margaritâ albâ et iridescente.

Shell obovate, inflated; valves thin; beaks scarcely prominent, at the tips undulated; epidermis yellow, thickly rayed; cardinal teeth compressed; lateral teeth small; nacre white and iridescent.

Hab. Stone's River, Tenn. S. M. Edgar.
My Cabinet, and Cabinet of Mr. Edgar.
Diam. .5, Length .7, Breadth 1 inch.

Shell obovate, inflated; substance of the shell thin; beaks scarcely prominent, with minute undulations at the tip; ligament very small and thin; epidermis yellow, with numerous capillary rays over nearly the whole disk; cardinal teeth compressed; lateral teeth small and nearly straight; anterior cicatrices distinct; posterior cicatrices confluent; dorsal cicatrices placed on the under side of the plate between the cardinal and lateral teeth; cavity of the shell deep and rounded; cavity of the beaks rather deep and angular; nacre white and iridescent.

Remarks.—One perfect individual and an odd valve were all which were taken by Mr. Edgar. Both these specimens are evidently females having the umbonial slope enlarged, and the dentate margin which so well characterizes the sex. These specimens may not be of full growth, but I doubt if they occur much larger. This species has some resemblance to a young *U. brevidens*, (nobis,) but is a very much smaller and thinner shell, and differs in the rays.

UNIO NITENS. Plate 12, Fig. 19.

Testâ ellipticâ, transversâ, subinflatâ; valvulis subtenuibus; natibus subprominentibus; epidermide tenebroso-fuscâ; dentibus cardinalibus parvis, elevatis; lateralibus longis subrectisque; margaritâ cupreâ, splendidissimâ et iridescente.

Shell elliptical, wide, somewhat inflated; valves rather thin; beaks somewhat prominent; epidermis dark brown; cardinal teeth small, erect; lateral teeth long and nearly straight; nacre copper-coloured, very splendid and iridescent.

Hab. Long Creek, Cocke Co., Tenn. S. M. Edgar.
My Cabinet, and Cabinets of Mr. Edgar, Dr. R. O. Currey and Prof. Troost.
Diam. .7, Length 1.2, Breadth 1.9 inches.

Shell elliptical, transverse, somewhat inflated, substance of the shell thin, thicker before; beaks rather prominent and slightly undulate at tip; ligament rather short and thin; epidermis dark brown, obscurely rayed; umbonial slope rounded; cardinal teeth small, erect, pointed, double in the left and single in the right valve; lateral teeth long, nearly straight, separated from the cardinal tooth; anterior cicatrices distinct; posterior cicatrices confluent; dorsal cicatrices placed directly in the cavity of the beaks; cavity of the shell rather deep; cavity of the beak shallow and angular; nacre of a very splendid copper-colour, whitish on the anterior basal margin, dark in the cavity and posterior part, beautifully iridescent.

Remarks.—The bright and splendid hue of the nacre of this species is superior to any other which has come under my notice. In outline it is closely allied to *U. obscurus* (nobis,) but its fine nacre easily distinguishes it. In young specimens may be observed indistinct small rays over the posterior part of the disk. Two of the specimens before me are enlarged at the posterior basal margin, indicating their being females.

UNIO LINEATUS. Plate 12, Fig. 20.

Testâ ellipticâ, inflatâ; valvulis tenuibus; natibus subprominentibus, ad apices undulatis; epidermide luteâ, radiatâ, politâ; dentibus cardinalibus parvis, lamellatis; lateralibus parvis, subcurvisque; margaritâ salmonis colore tinctâ et iridescente.

Shell elliptical, inflated; valves thin; beaks rather prominent, undulate at the tip; epidermis yellow, radiated, polished; cardinal teeth small, lamellar; lateral teeth small and somewhat curved; nacre salmon-coloured and iridescent.

Hab. Chattahoochee River, Columbus, Georgia. Dr. Boykin.
My Cabinet.

Diam. .6, Length .9, Breadth 1.4 inches.

Shell elliptical, inflated, with distinct linear rays over the whole disk except on the posterior slope; substance of the shell thin; beaks rather prominent, undulate at the tip; ligament short and rather thick; epidermis yellow and finely polished; cardinal teeth small, compressed, disposed to be double in both valves; lateral teeth small and somewhat curved; anterior cicatrices distinct; posterior cicatrices confluent; dorsal cicatrices on the plate between the cardinal and lateral teeth; cavity of the shell large; cavity of the beaks rather deep and angular; nacre salmon-coloured and iridescent.

Remarks.—This species is allied to the *U. occidens,* (nobis,) but is a much smaller shell. The three specimens under my examination are all the same size, and might easily be mistaken for young individuals of the *occidens.* It differs in the rays, the undulation of the beaks and the size. The rays are slightly interrupted and are visible through the beautiful and delicate nacre.

UNIO ATRO-MARGINATUS. Plate 13, Fig. 21.

Testâ plicatâ, oblongâ, compressâ; valvulis subtenuibus; natibus prominulis; epidermide tenebrosâ; dentibus cardinalibus parvis; lateralibus longis subrectisque; margaritâ purpureâ et valdè iridescente.

Shell plicate, oblong, compressed; valves rather thin; beaks somewhat prominent; epidermis very dark; cardinal teeth small; lateral teeth long and nearly straight; nacre purple and very iridescent.

Hab. Chattabooche River, Columbus, Geo. Dr. Boykin.
My Cabinet.

Diam. .5, Length 1.2, Breadth 1.9 inches.

Shell folded over the whole disk, oblong, compressed; substance of the shell rather thin; beaks somewhat prominent; ligament rather short and thin; epidermis very dark, almost black; posterior slope carinate and covered with regular, nearly parallel folds; cardinal teeth small, double in the left and single in the right valve; lateral teeth long and nearly straight; anterior cicatrices distinct; posterior cicatrices confluent; dorsal cicatrices placed nearly in the centre of the cavity of the shell; cavity of the shell very shallow; cavity of the beaks very small; nacre purple and very iridescent.

Remarks.—Two specimens only of this distinct and interesting species were received among the shells from Dr. Boykin. In outline and in the folds it resembles the *Margaritana rugosa,* (*Alasmodonta rugosa,* Barnes.) It differs from it not only generically in the teeth, but in the colour of the epidermis, in the nacre and in having folds over the whole disk. The two specimens before me have a beautiful purple nacre shading off into white towards the cavity of the beaks. The folds causing undulations within the cavity display the fine iridescence of the nacre. The margin is remarkably broad and black. It is very likely that, when numerous specimens are examined, the nacre may be found to vary, and some prove entirely white and some salmon-coloured as in the *Unio complanatus.*

UNIO BOYKINIANUS. Plate 13, Fig. 22.

Testâ alatâ, plicatâ, triangulari, subcompressâ; valvulis crassis; natibus prominulis; epidermide tenebroso-fuscâ; dentibus cardinalibus parvis; lateralibus sublongis; margaritâ albâ et iridescente.

Shell winged, folded, triangular, rather compressed; valves thick; beaks somewhat prominent; epidermis dark brown; cardinal teeth small; lateral teeth rather long; nacre white and iridescent.

Hab. Chattahoochee River, Columbus, Geo. Dr. Boykin.
My Cabinet.

Diam. .1.2, Length 2.2, Breadth 2.8 inches.

Shell winged, folded all over the disk, triangular; rather compressed; substance of the shell thick; beaks somewhat prominent; ligament short and thin; epidermis dark brown; cardinal teeth small, apparently divided into three lobes in each valve; lateral teeth rather long and slightly curved; anterior cicatrices distinct; posterior cicatrices confluent; dorsal cicatrices on the under side of the plate near to the cardinal tooth; cavity of the shell rather deep; cavity of the beak angular; nacre white and iridescent.

Remarks.—I owe to the kindness of Dr. Boykin this fine species, as well as many others herein described from the same locality. It has perhaps more resemblance to *U. Nicklinianus* (nobis,) than to any other species in its outline, and its folds, which latter are, however, larger. On the posterior slope the folds are very regular, on the other part, less so. I have had in my possession many years a young individual from the late Judge Tait, much resembling this, and it may prove to be the same species. The geographical distribution of the species of this family is of great interest and very important in many respects, as we find a marked distinction in nearly all the different species respectively inhabiting the waters east and west of the mountains, as I have elsewhere observed. For many years I have been exceedingly desirous of obtaining the shells inhabiting the approximating waters which fall respectively into the Atlantic on one side, and the Gulf of Mexico east of the Mississippi, on the other. The Chattahoochee is the first river of magnitude rising in the mountains which descends to the gulf, unless the Flint river be excepted. Among the species from this locality now under examination, I find three with folds (none with tubercles,) which, as we do not possess any in our eastern rivers, may be considered to have the western character. The remainder in part resemble our eastern species, but others again resemble the smooth ones of the West. I have made many attempts to obtain the shells of Ocmulgee river, the most southern of the Atlantic basin, without success. It would be exceedingly desirable to compare the species of the two basins, in order to designate the characters of those so nearly placed together in waters of so wide a drainage.

UNIO SUBANGULATUS. Plate 13, Fig. 23.

Testâ ellipticâ, subinflatâ, posticè subangulatâ; valvulis tenuibus; natibus subprominentibus; epidermide luteâ, radiatâ, politâ; dentibus cardinalibus subgrandibus, erectisque; lateralibus sublongis subrectisque; margaritâ salmonis colore tinctâ et iridescente.

Shell elliptical, somewhat inflated, subangulate behind; valves thin; beaks rather prominent; epidermis yellow, rayed, polished; cardinal teeth rather large and erect; lateral teeth rather long and nearly straight; nacre salmon-coloured and iridescent.

Hab. Chattahoochee River, Columbus, Georgia. Dr. Boykin.
My Cabinet.

Diam. .6, Length .1, Breadth 1.7 inches.

Shell elliptical, somewhat inflated, subangulate behind; substance of the shell thin; beaks rather prominent, slightly undulate at the tip; ligament rather short and thin; epidermis yellow, rayed over the whole disk, polished; cardinal teeth double in both valves, erect, pointed; lateral teeth rather long and nearly straight; anterior cicatrices distinct; posterior cicatrices confluent; dorsal cicatrices placed on the under side of the cardinal tooth; cavity of the shell rather deep; cavity of the beaks small and angular; nacre salmon-coloured and iridescent.

Remarks.—In the examination of seven specimens of this species one proved to have a white nacre and another to have obsolete rays. The whole disk is usually covered with rays; the colour of the epidermis is of an ochry yellow.

UNIO PILARIS. Plate 14, Fig. 24.

Testâ rotundatâ, inflatâ; valvulis crassis; natibus elevatis; epidermide striatâ, tenebroso-fuscâ; dentibus cardinalibus subgrandibus; lateralibus longulis subrectisque; margaritâ albâ.

Shell rounded, inflated; valves thick; beaks elevated; epidermis striate and dark brown; cardinal teeth rather large; lateral teeth rather long and nearly straight; nacre white.

Hab. French, Broad and Holston Rivers, East Tenn. S. M. Edgar.
My Cabinet, and Cabinets of Mr. Edgar and Dr. Troost.
Diam. .1, Length 1.4, Breadth 1.6 inches.

Shell rounded, inflated, solid; substance of the shell very thick; beaks elevated; ligament rather short and thick; epidermis with indistinct rays, striate, dark brown, becoming squamose towards the margin; lines of growth approximate; cardinal teeth rather large; lateral teeth rather long, thick, nearly straight; anterior cicatrices distinct; posterior cicatrices distinct, the smaller one being placed on the end of the lateral tooth; dorsal cicatrices placed on the under side of the cardinal tooth; cavity of the shell shallow, rounded; cavity of the beaks rather deep and angular; nacre milky white.

Remarks.—Mr. Edgar brought this species from East Tennessee, and kindly submitted several specimens to me. It seems to be naturally placed between *U. ebenus* and *U. subrotundus* (nobis,) and to resemble *U. maculatus*, Con. Mr. Edgar informs me that the animal is colourless.

UNIO TUBEROSUS. Plate 14, Fig. 25.

Testâ nodosâ, triangulari, emarginatâ; valvulis crassis; natibus elevatis; epidermide luteâ, striatâ; dentibus cardinalibus magnis; lateralibus parvis rectisque; margaritâ albâ.

Shell nodulous, triangular, emarginate; valves thick; beaks elevated; epidermis yellow, striate; cardinal teeth large; lateral teeth small and straight; nacre white.

Hab. Cany Fork and Cumberland Rivers, Middle Tenn. S. M. Edgar.
My Cabinet, and Cabinets of Mr. Edgar and Dr. Troost.
Diam. .1, Length 1.9, Breadth 2.2 inches.

Shell tuberculate nearly all over, triangular, emarginate at the posterior margin, depressed behind the umbonial slope; substance of the shell very thick before, thinner behind; beaks elevated; ligament rather short and thick; epidermis yellow, striate; cardinal teeth very large and double in both valves; lateral teeth very short, thick and straight; anterior cicatrices distinct; posterior cicatrices distinct; dorsal cicatrices placed on the under side of the cardinal tooth; cavity of the shell shallow; cavity of the beaks very deep and angular; nacre white and silvery.

Remarks.—This is a very interesting species, and so closely resembles the *U. Metanever*, Raf. on one side, and *U. intermedius*, Con. on the other, that I at first, on seeing a single specimen, had doubts of the propriety of proposing for it a new name. I have before me five individuals brought by Mr. Edgar from Middle Tennessee, and also five specimens of *U. intermedius* which came from East Tennessee. The latter are all smaller than the *tuberosus*, and differ in having very few and very small tubercles, while the *tuberosus* is crowded with large ones. From the *metanever* it differs totally, in being without the large and regular tubercles of the umbonial slope, and the slope is less elevated. The nacre is very silvery, and with little or no iridescence. In one specimen there are a few indistinct green spots in the epidermis, which in fine young specimens may resemble the arrow-headed marks of the *metanever*.

UNIO PLENUS. Plate 14, Fig. 26.

Testâ triangulari, inflatâ; valvulis crassissimis; natibus elevatis, crassis; epidermide luteo-fuscâ, rugosâ; dentibus cardinalibus magnis; lateralibus brevibus subrectisque; margaritâ albâ et iridescente.

Shell triangular, inflated; valves very thick; beaks elevated and thick; epidermis yellowish-brown, wrinkled; cardinal teeth large; lateral teeth short and nearly straight; nacre white and iridescent.

Hab. Ohio River, near Cincinnati. T. G. Lea.
My Cabinet and Cabinet of T. G. Lea.

Diam. 1.1, Length 1.8, Breadth 1.6 inches.

Shell triangular, inflated, flattened before the umbonial slope, nearly equilateral, emarginate at base; substance of the shell very thick; beaks elevated, very thick and incurved, at the tip slightly undulate; ligament very short and rather thick; epidermis yellowish-brown, wrinkled, obscurely radiated on the umbones, the rays being lost in the wrinkles nearly half-way from the beaks; umbonial slope carinate; posterior slope much flattened; cardinal teeth large, single in the left and double in the right valve; lateral teeth short, nearly straight and disposed to be double in both valves; anterior cicatrices distinct; posterior cicatrices distinct, the smaller one being placed on the end of the lateral tooth; dorsal cicatrices placed on the under side of the cardinal tooth; cavity of the shell rather deep; cavity of the beaks deep and angular; nacre white and iridescent.

Remarks.—This species has embarrassed me for some time, as I have had, until recently, but few specimens. There is a close resemblance in the specimens before me both to the *U. obliquus*, Lam., and *U. trigonus*, (nobis.) It differs from both in being more rounded at the base, the emargination being very small. It is higher in the beaks than the *trigonus*, and more flattened there than the *obliquus*. In colour it approaches more to the former. The rays are less distinct than in the *obliquus*, rarely reaching more than half-way to the base. They vary very little in all the specimens I have examined. In two specimens out of fourteen before me, the nacre in the cavity of the shell is pale salmon colour.

UNIO HOLSTONENSIS. Plate 15, Fig. 27.

Testâ triangulari, solidâ, inflatâ; valvulis crassis; natibus magnis, elevatis; epidermide tenebroso-fuscâ, radiatâ; dentibus cardinalibus subgrandibus; lateralibus crassis brevibusque; margaritâ albâ et iridescente.

Shell triangular, solid, inflated; valves thick; beaks large and elevated; epidermis dark brown, radiated; cardinal teeth rather large; lateral teeth thick and short; nacre white and iridescent.

Hab. Holston River, Tenn. S. M. Edgar.
My Cabinet and Cabinet of Mr. Edgar.

Diam. .8, Length 1.1, Breadth 1.5 inches.

Shell triangular, solid, inflated; substance of the shell very thick, thinner behind; beaks elevated, large and solid; ligament short and rather thick; epidermis dark brown with several large interrupted rays over the umbones; cardinal teeth rather large; lateral teeth oblique, short, thick and nearly straight; anterior cicatrices distinct; posterior cicatrices distinct, the smaller one being placed on the end of the lateral tooth; dorsal cicatrices scarcely perceptible, placed on the inferior part of the cardinal tooth; cavity of the shell very shallow; cavity of the beaks shallow and rounded; nacre white and iridescent.

Remarks.—A single specimen only of this shell was received with those sent by Mr. Edgar. It is a well characterized little species. In outline it is somewhat like *U. trigonus*, (nobis,) but is more rounded, has not so sharp a carina and may be distinguished by its broad rays.

UNIO BOURNIANUS. Plate 15, Fig. 28.

Testâ triangulari, compressâ; valvulis crassis; natibus elevatis, incurvis, ad apices undulatis; epidermide luteâ, densè radiatâ; dentibus cardinalibus subgrandibus; lateralibus subcurvis; margaritâ albâ et iridescente.

Shell triangular, compressed; valves thick; beaks elevated, incurved and undulated at the tip; epidermis yellow, much radiated; cardinal teeth rather large; lateral teeth somewhat curved; nacre white and iridescent.

Hab. Scioto River, near Chillicothe, Ohio. A. Bourne.

My Cabinet, and Cabinet of Mr. Bourne.

Diam. .7, Length 1.2, Breadth 1.2 inches.

Shell triangular, very much compressed behind the umbonial slope, swollen over the umbones; substance of the shell very thick, thinner towards the posterior basal margin; beaks elevated, very thick and solid, incurved and undulated at the apex; ligament short and thin; epidermis yellow with numerous interrupted rays nearly over the whole disk, the lines of growth being very distinct; cardinal teeth rather large and broad; lateral teeth thick and somewhat curved; anterior cicatrices distinct, the superior one very deep; posterior cicatrices distinct, and placed on the end of the lateral tooth; dorsal cicatrices placed rather under the cardinal tooth; cavity of the shell shallow; cavity of the beaks shallow and angular; nacre white and iridescent.

Remarks.—This species seems only to have been observed by Mr. Bourne, by whose kindness I have before me the two specimens found by him. In outline, general form and solidity it resembles most *U. pyramidatus*, (nobis.) It differs entirely in the epidermis being yellow and having rays, and in the nacre which has no appearance of colour whatever in either specimen. In one individual beautiful green rays cover the disk—in the other they do not reach to the anterior margin. The epidermis in both is remarkably yellow. I name it after the naturalist Mr. Bourne, who has first observed it.

UNIO PAULUS. Plate 15, Fig. 29.

Testâ ellipticâ, inflatâ, minimâ; valvulis crassis; natibus subprominentibus; epidermide subnigrâ; dentibus cardinalibus parvis; lateralibus longis curvisque; margaritâ albâ et iridescente.

Shell elliptical, inflated, very small; valves thick; beaks somewhat prominent; epidermis nearly black; cardinal teeth small; lateral teeth long and curved; nacre white and iridescent.

Hab. Chattahoochee River, Columbus, Georgia. Dr. Boykin.
My Cabinet.

Diam. .4, Length .6, Breadth .9 inches.

Shell elliptical, inflated, very small; substance of the shell thick, thinner behind; beaks somewhat prominent; ligament short and thin; epidermis nearly black; cardinal teeth small, disposed to be double in both valves; lateral teeth long and curved; anterior cicatrices distinct; posterior cicatrices confluent; dorsal cicatrices placed on the inferior part of the tooth; cavity of the shell deep; cavity of the beaks very small; nacre white, pearly and beautifully iridescent on the posterior part.

Remarks.—A single specimen only of this species was received. It seems to be most nearly allied to *U. parvus*, Barnes, but differs in being a smaller species and having a thicker nacre.

More recently I received from J. H. Couper, Esq., of Hopeton near Darien three specimens of this species, one of which is sub-carinate on the umbonial slope. A second one is enlarged posteriorly exhibiting the female character. All of the three are rather smaller than that received from Dr. Boykin.

UNIO EDGARIANUS. Plate 15, Fig. 30.

Testâ triangulari, compressâ, emarginatâ; valvulis crassis, natibus elevatis; epidermide luteâ, valdè radiatâ; dentibus cardinalibus magnis, lateralibus rectis; margaritâ albâ et iridescente.

Shell triangular, compressed, emarginate; valves thick; beaks elevated; epidermis yellow, much radiated; cardinal teeth large; lateral teeth straight; nacre white and iridescent.

Hab. Holston River, Tenn. Prof. Troost and Dr. Currey.
" Tennessee River, at Florence, Ala. Mr. Dutton.
My Cabinet, and Cabinets of Mr. Edgar, Dr. Currey and Prof. Troost.

Diam. .8, Length 1.2, Breadth 1.3 inches.

Shell triagular, compressed, emarginate at base, flattened or widely furrowed before the umbonial slope; substance of the shell thick; beaks elevated and thick; ligament small, linear; epidermis yellow, with numerous or large dark green rays over nearly the whole disk; umbonial slope carinate; cardinal teeth large, pointed; lateral teeth oblique and straight; anterior cicatrices distinct; posterior cicatrices distinct, the smaller one being placed on the end of the lateral tooth; dorsal cicatrices small, placed on the upper side of the cavity of the beaks; cavity of the shell very shallow; cavity of the beaks small and angular; nacre white and iridescent.

Remarks.—Two specimens only were received by me from Mr. Edgar, to whom I dedicate it. It is an interesting little species, and is remarkable for its form and the dark green rays, which almost cover the yellow ground. The larger specimen has a wide furrow nearly down the centre of the valve from the beak—the smaller one is only flattened there. In both specimens the posterior slope is devoid of rays.

UNIO DOLABELLOIDES. Plate 15, Fig. 31.

Testâ subrotundâ, subinflatâ; valvulis crassissimis; natibus valdè elevatis; epidermide fuscâ, radiatâ; dentibus cardinalibus minimis; lateralibus brevibus rectisque; margaritâ albâ et iridescente.

Shell rather round, somewhat inflated; valves very thick; beaks much elevated; epidermis brown, radiated; cardinal teeth very small; lateral teeth short and straight; nacre white and iridescent.

Hab. Holston River, Tenn. S. M. Edgar.
My Cabinet, and Cabinet of Mr. Edgar.

Diam. .9, Length 1.3, Breadth 1.3 inches.

Shell rather round, somewhat inflated, flat before the umbonial slope; substance of the shell very thick; beaks very much elevated and thick; ligament very short; epidermis brown, with broad interrupted rays behind the umbonial slope; umbonial slope sub-carinate; cardinal teeth very small and rather flattened; lateral teeth short and straight, with a broad plate intervening between them and the cardinal tooth; anterior cicatrices distinct; posterior cicatrices distinct, the smaller one being placed on the end of the lateral tooth; dorsal cicatrices very small and placed on the upper side of the cavity of the beaks; cavity of the shell shallow; cavity of the beaks angular; nacre white and iridescent.

Remarks.—Mr. Edgar procured this species when on a geological tour with Professor Troost up the Holston River. A single specimen only is in my possession, but its characters are so distinct that I do not hesitate to propose it as a new species. It seems to be between *U. undatus*, (Barnes,) and *U. Cor*, (Conrad.) The specimen before me is remarkable for the broad rays extending to the basal margin behind the umbonial slope on the flattened part of the side of the valve. The beaks of the specimen being eroded, it is impossible to say if the tips be undulated or not.

UNIO BOYDIANUS. Plate 16, Fig. 32.

Testâ obovatâ, subinflatâ, valdè inæquilaterali; valvulis subtenuibus; natibus subprominentibus, ad apices undulatis; epidermide luteo fuscâ; dentibus cardinalibus compressis; lateralibus longis subrectisque; margaritâ albâ et iridescente.

Shell obovate, rather inflated, very inequilateral; valves rather thin; beaks rather prominent, undulate at the tip; epidermis yellowish-brown; cardinal teeth compressed; lateral teeth long and nearly straight; nacre white and iridescent.

Hab. Oak Orchard Creek, Orleans County, N. Y. Dr. Boyd.
My Cabinet, and Cabinet of Dr. Jay.

Diam. .8, Length 1.2, Breadth 1.9 inches.

Shell obovate, rather inflated, very inequilateral, subangulate before, with regular, rather close and nearly equidistant marks of growth; substance of the shell rather thin, thicker before; beaks rather prominent, with small undulations at the tip; ligament rather short and thin; epidermis yellowish-brown, striate; cardinal teeth compressed, double in both valves; lateral teeth long and nearly straight; anterior cicatrices distinct; posterior cicatrices confluent; dorsal cicatrices on the under side of the cardinal tooth; cavity of the shell rather deep and rounded; cavity of the beaks shallow and subangular; nacre white and iridescent.

Remarks.—Dr. Jay kindly sent me two specimens of this shell some time since. They were collected by Dr. Boyd, Assistant State Geologist. One of them has a few rays behind, the other is without rays. The anterior slope in both specimens is truncate, so much so in the smaller one, as to induce me to believe it to be deformed. It is perhaps most nearly allied to *U. ochraceus*, Say.

UNIO SLOATIANUS. Plate 16, Fig. 33.

Testâ plicatâ, oblongâ, subcompressâ, valdè inæquilaterali; valvulis crassis; natibus subprominentibus; epidermide subnigrâ; dentibus cardinalibus subgrandibus; lateralibus crassis longisque; margaritâ albâ et purpureâ.

Shell plicate, oblong, rather compressed, very inequilateral; valves thick; beaks somewhat prominent; epidermis nearly black; cardinal teeth rather large; lateral teeth thick and long; nacre white and purple.

Hab. Chattahoochee River, Georgia. L. W. Sloat.
My Cabinet, and Cabinets of Dr. Jay and Mr. Sloat of Mobile.

Diam. 1.5, Length 2.3, Breadth 4.2 inches.

Shell folded, oblong, rather compressed, very inequilateral, biangular behind; substance of the shell thick; beaks somewhat prominent; ligament long and thick; epidermis nearly black; cardinal teeth rather large and striate; lateral teeth thick and long; anterior cicatrices distinct; posterior cicatrices confluent; dorsal cicatrices placed under the plate between the cardinal and lateral teeth; cavity of the shell shallow; cavity of the beaks shallow and angular; nacre white with purple tints, iridescent behind.

Remarks.—The specimen described was kindly lent to me by Dr. Jay, who received it of Mr. Sloat, the latter gentleman having found but two specimens. The specimen quoted as being in my Cabinet, was sent to me by Dr. Boykin of Columbus, Georgia. I have classed it with the *Sloatianus*, with some hesitation, as it differs in being a thicker and more inflated shell, in being more plicate, and in having an angle on the umbonial slope. The specimen is a depauperated one, and when more perfect ones are observed, other characters may be found, which would render it necessary to make a distinct species of it.

UNIO INCRASSATUS. Plate 16, Fig. 34.

Testâ plicatâ, triangulari, subinflatâ; valvulis crassis; natibus subprominentibus; epidermide subnigrâ; dentibus cardinalibus parvis; lateralibus longis subrectisque; margaritâ salmonis colore tinctâ, vel purpureâ vel albâ et iridescente.

Shell plicate, triangular, rather inflated; valves thick; beaks somewhat prominent; epidermis nearly black; cardinal teeth small; lateral teeth long and nearly straight; nacre salmon-coloured, purple or white and iridescent.

Hab. Chattahoochee River, near Columbus, Georgia. Dr. Boykin.
My Cabinet, and Cabinet of Mr. Nicklin.
Diam. .9, Length, 1.4 Breadth 2.2 inches.

Shell folded on the posterior slope, triangular, rather inflated; substance of the shell thick, thinner behind; beaks somewhat prominent; ligament short and thick; epidermis nearly black; cardinal teeth small, lobed and striate; lateral teeth long and nearly straight; anterior cicatrices distinct; posterior cicatrices confluent; dorsal cicatrices placed on the under side of the plate between the cardinal and lateral teeth; cavity of the shell rather shallow; cavity of the beaks shallow and subangular; nacre salmon-coloured, purple or white, and very iridescent behind.

Remarks.—Specimens of various ages of this species were kindly sent to me by Dr. Boykin. In general outline and appearance it closely resembles *U. crassidens*, Lam., but is a much smaller species. It belongs to that great group of which the *U. complanatus*, may be considered the type. Among the numerous specimens before me, the salmon colour prevails greatly, purple being the rarest. In the young specimens obscure rays may be observed, in the adults the umbonial slope is usually angular, and bounds the folds, which are not numerous.

UNIO DELPHINUS. Plate 17, Fig. 35.

Testâ alatâ, latâ, compressâ, posticè biangulatâ, valdè inæquilaterali; alâ elevata, acuminatâ, duplici; valvulis subcrassis; natibus vix prominentibus; epidermide tenebroso-fuscâ; dentibus cardinalibus parvis, crenulatis; lateralibus longissimis rectisque; margaritâ albâ et iridescente.

Shell winged, wide, compressed, biangular behind, very inequilateral; wing high, acuminate and double; valves somewhat thick; beaks scarcely prominent; epidermis dark brown; cardinal teeth small, crenulate; lateral teeth very long and straight; nacre white and iridescent.

Hab. New Holland.? G. Von den Busch, M. D.
My Cabinet, and Cabinets of Dr. Von den Busch and Mr. Gruner of Bremen.
Diam. 1.2, Length 3.6, Breadth 5.5 inches.

Shell winged, wide, compressed, biangular behind, subangular on the umbonial slope, with numerous very minute granulations over the disk, very inequilateral; wing high, duplex, terminating in two points, the anterior one being the highest and acutely pointed; substance of the shell rather thick; beaks scarcely prominent; ligament concealed, except the posterior part, which is spread out on the valve; epidermis very dark brown; cardinal teeth small, crenulate; lateral teeth very long and straight; anterior cicatrices distinct; posterior cicatrices confluent; dorsal cicatrices placed in a row in the cavity of the beaks; cavity of the shell very shallow; cavity of the beaks exceedingly small; nacre white and beautifully iridescent.

Remarks.—Since I described the *U. cucumoides*, from New South Wales, I have received the above described species from Dr. Von den Busch, and by his kindness I am permitted to place it in my Cabinet. It is certainly among the most curious and interesting species which have been observed. The duplex form of the wing is very remarkable. The early growth rises almost perpendicularly above the beaks to a point, the succeeding growth forming its symphynote fold in a horizontal line, sets off much below the apex of the first growth. The whole presents the appearance of a part being broken out. This, however, is by no means the case. It is a character, and we may observe it in a less degree, but still in a perfect manner in the very young of the *U. lævissimus*, (nobis,) which usually if not always at the second growth on the wing, takes a new starting point to form the fold over the ligament. The cardinal teeth are very remarkable, presenting but a small cleft, while the crenulations fill up the space connected with the lateral tooth, in this resembling the *Iridina*. The margin anterior to the beaks presents the appearance of there having been a wing. Immediately before the cardinal tooth there is a remarkable angular notch in the nacre filled up with laminated epidermal matter. The anterior cicatrices have the peculiarity mentioned in the *U. cucumoides*, but the three cicatrices are here perfectly distinct. The epidermis is minutely striate over most of the disk; but over the middle part, and on the wing, there may be observed with a lens numerous very remarkable, minute, round granulations.

Dr. Von den Busch informs me, that he obtained this shell from his friend Mr. Gruner, who, from "its similarity with a dolphin," proposed the name of *delphinus*, which I have adopted. As the vessel which brought this shell also visited some of the islands of the Indian Ocean, Mr. Gruner thinks there may be some doubt of its inhabiting New Holland.*

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* Since this paper went to press, a letter received from Dr. Von den Busch, informs me that this shell came from the "river Souzi, on the coast of Malacca."

UNIO PUSILLUS. Plate 18, Fig. 36.

Testâ ellipticâ, subcompressâ, posticè angulatâ; valvulis subtenuibus; natibus subprominentibus; epidermide tenebroso-fuscâ, politâ; dentibus cardinalibus minimis; lateralibus longis subcurvisque; margaritâ albâ et iridescente.

Shell elliptical, rather compressed, angular behind; valves rather thin; beaks rather prominent; epidermis dark brown, polished; cardinal teeth very small; lateral teeth long and somewhat curved; nacre white and iridescent.

Hab. Ogechee River, Georgia, Major Le Conte.
My Cabinet, and Cabinet of Major Le Conte.
Diam. .5, Length .7, Breadth 1.2 inches.

Shell elliptical, rather compressed, angular behind; umbonial slope angular; substance of the shell rather thin; beaks rather prominent; ligament small and thin; epidermis dark brown, darker on the posterior slope; polished, furnished with small obscure rays; cardinal teeth very small; lateral teeth long and somewhat curved; anterior cicatrices distinct; posterior cicatrices confluent; dorsal cicatrices placed on the under side of the plate between the cardinal and lateral teeth; cavity of the shell small; cavity of the beaks very shallow and angular; nacre white and iridescent.

Remarks.—Some years since several specimens of this shell were kindly sent to me by Major Le Conte. Fearing that they were young shells of some known species, I deferred describing them. I have not since been able to place them with any known species, and am now persuaded that they are distinct. This species is somewhat allied to *U. complanatus.*

UNIO JAVANUS. Plate 18, Fig. 37.

Testâ ellipticâ, subinflatâ, valdè inæquilaterali, posticè subbiangulatâ; valvulis subcrassis; natibus vix prominentibus; epidermide luteo-fuscâ; dentibus cardinalibus minimis; lateralibus longis curvisque; margaritâ albâ et iridescente.

Shell elliptical, rather inflated, very inequilateral, subbiangular behind; valves rather thick; beaks scarcely prominent; epidermis yellowish-brown; cardinal teeth very small; lateral teeth long and curved; nacre white and iridescent.

Hab. Java. G. Von den Busch, M. D.

My Cabinet, and Cabinet of Dr. Von den Busch of Bremen.

Diam. .8, Length 1.3, Breadth 2.2 inches.

Shell elliptical, rather inflated, very inequilateral, subbiangular and compressed behind; substance of the shell rather thick; beaks scarcely prominent; ligament rather short and thin; epidermis smooth, shining, yellowish brown, very dark on the posterior slope; cardinal teeth very small, double in the right, and single in the left valve; lateral teeth long and curved; anterior cicatrices confluent; posterior cicatrices confluent; dorsal cicatrices placed under the plate between the cardinal and lateral teeth; cavity of the shell rather deep; cavity of the beaks rather shallow; nacre white and iridescent.

Remarks.—This species has in its exterior somewhat the appearance of a small *Anodonta fluviatilis*, (nobis.) The posterior and dorsal margins are sinuous. The first grown is large. The second and third are approximate. The beaks of the only specimen I have before me are eroded, but the small undulations visible on the posterior slope induce me to believe that when perfect individuals are observed, the tip will be found to be finely undulate. The cardinal teeth are remarkably small.

UNIO ORIENTALIS. Plate 18, Fig. 38.

Testâ transversâ, subinflatâ, valdè inæquilaterali; valvulis subcrassis; natibus subprominentibus, ad apices undulatis; epidermide luteâ, nitidâ; dentibus cardinalibus longis; lateralibus longis subcurvisque; margaritâ albâ et iridescente.

Shell wide, somewhat inflated, very inequilateral; valves somewhat thick; beaks slightly prominent, undulate at the tip; epidermis yellow, shining; cardinal teeth long; lateral teeth long and somewhat curved; nacre white and iridescent.

Hab. Java.? G. Von den Busch, M. D.

My Cabinet, and Cabinet of Dr. Von den Busch.

Diam. .4, Length .7, Breadth 1.5 inches.

Shell wide, somewhat inflated, very inequilateral, angular on the umbonial slope, substance of the shell somewhat thick; beaks slightly prominent, with small undulations at the tip; umbonial slope with two raised lines and two yellow rays on each valve diverging from the beak; ligament rather long and thin;

epidermis yellow, inclining to greenish brown, smooth and shining; cardinal teeth long and compressed; lateral teeth long and somewhat curved; anterior cicatrices confluent; posterior cicatrices confluent; dorsal cicatrices placed on the centre of the cavity of the beaks; cavity of the shell rather shallow; cavity of the beaks shallow and subangular; nacre pearly white and very iridescent.

Remarks.—This species in outline resembles the *U. pictorum*, Lam. and *Unio Corrianus*, nobis. It was sent to me from Bremen by Dr. Von den Busch, who thinks it came from Java, but is not sure of its *habitat*. In the two specimens before me the rays on the posterior portion are very distinct.

MARGARITANA VONDENBUSCHIANA. Plate 18, Fig. 39.

Testâ obovatâ, compressâ, inæquilaterali; valvulis tenuibus; natibus subprominentibus; epidermide luteo-fuscâ; dentibus cardinalibus parvis, tuberculatis; margaritâ albâ et iridescente.

Shell obovate, compressed, inequilateral; valves thin; beaks somewhat prominent; epidermis yellowish-brown; cardinal teeth small, tuberculate; nacre white and iridescent.

Hab. Java. G. Von den Busch, M. D.
My Cabinet, and Cabinet of Dr. Von den Busch of Bremen.
Diam. .8, Length 1.8, Breadth 2.8 inches.

Shell obovate, compressed, inequilateral; substance of the shell thin; beaks somewhat prominent; ligament long and thin; epidermis yellow, brown, obscurely rayed, darker on the posterior slope and lighter towards the basal margin; cardinal teeth small, consisting of an irregular tubercle; anterior cicatrices confluent; posterior cicatrices confluent; dorsal cicatrices placed in a row across the cavity of the beaks; cavity of the shell shallow; cavity of the beaks very small; nacre white and iridescent.

Remarks.—The form of the teeth in this shell places it near to the genus *Anodonta*. The enlargement of this part is greater than in the *Alasmodonta edentula*, Say, (*Anodon areolatus*, Swainson,) which I have, in my synopsis, placed with the *Anodontæ*. It, in fact, falls into that division which d'Orbigny has made under the name of *Monocondylæa*, and is somewhat like his species *fossiculifera*. I name it after Dr. Von den Busch, to whose kindness I am indebted for the specimen now described.

MARGARITANA CURREYIANA. Plate 18, Fig. 40.

Testâ triangulari, subcompressâ, emarginatâ, sulcatâ; valvulis crassis; natibus subprominentibus, ad apices undulatis; epidermide luteo-fuscâ; dentibus cardinalibus magnis; margaritâ albâ et iridescente.

Shell triangular, somewhat compressed, emarginate, sulcate; valves thick; beaks rather prominent, undulated at the tip; epidermis yellowish brown; cardinal teeth large; nacre white and iridescent.

Hab. Stone's River, Tenn. Dr. Currey of Nashville.

My Cabinet, and Cabinets of Dr. Currey, Dr. Troost and Mr. Edgar.

Diam. .5, Length .7, Breadth 1 inch.

Shell triangular, somewhat compressed or flattened on the side, emarginate at the basal and posterior basal margins, furrowed on the posterior slope; substance of the shell thick, thinner before; beaks rather prominent, with large undulations at the tip, nearly medial; ligament short and rather thick; epidermis yellowish brown; umbonial slope carinate; posterior slope flattened; cardinal teeth large, one closing in behind the other; anterior cicatrices distinct; posterior cicatrices confluent; dorsal cicatrices placed under the cardinal tooth; cavity of the shell very small; cavity of the beaks angular and shallow; nacre white and iridescent.

Remarks.—A single specimen of this species of *Margaritana* was among the shells from Dr. Currey. He had found two or three only, all of which were of the same diminutive size, and, like mine, much eroded. It is about the size of the *U. fabalis*, (nobis,) and has some resemblance to it. If it were not separated generically from it, the furrow on the posterior slope causing two oblique folds would at once distinguish it. It is a very solid shell, and the teeth are robust. I name it after Dr. Currey, to whose kindness I am indebted for the possession of the shell.

ANODONTA ARGENTEA. Plate 19, Fig. 41.

Testâ ellipticâ, inflatâ, transversâ; valvulis tenuibus; natibus prominulis; apicibus minutè undulatis; epidermide fuscâ, radiatâ; margaritâ argenteâ et iridescente.

Shell elliptical, inflated, wide; valves thin; beaks rather prominent; apices minutely undulate; epidermis brown, radiated; nacre silvery and iridescent.

Hab. Stone's River, Tenn. Dr. Currey.
My Cabinet, and Cabinet of Dr. Currey.
Diam. 1.2, Length 1.5, Breadth 2.9 inches.

Shell elliptical, inflated, wide; substance of the shell thin; beaks rather prominent, with two or three small undulations at the tip; ligament thin and rather long; epidermis brown with dark green rays over the disk; anterior cicatrices distinct; posterior cicatrices confluent; dorsal cicatrices none; cavity of the shell very deep; cavity of the beak very shallow; dorsal line slightly curved, being in the left valve elevated under the beak in the form of a lamellar tooth; nacre silvery and iridescent.

Remarks.—In form this species is closely allied to *An. Ferussaciana*, (nobis.) Its nacre is, however, more silvery and thicker, and it has dark rays.

ANODONTA HARPETHENSIS. Plate 19, Fig. 42.

Testâ ellipticâ, inflatâ, carinatâ; valvulis tenuibus; natibus subprominentibus; apicibus undulatis; epidermide luteâ et viride; margaritâ salmonis colore tinctâ; margine lato.

Shell elliptical, inflated, carinate; valves thin; beaks rather prominent; apices undulated; epidermis yellow and green; nacre salmon-coloured; margin broad.

Hab. Harpeth River, Tenn. S. M. Edgar.
My Cabinet, and Cabinets of Mr. Edgar and Dr. Troost.
Diam. 1.8, Length 2.3, Breadth 4.2 inches.

Shell elliptical, inflated, carinate; substance of the shell thin; beaks rather prominent, with a double undulation at the apices; ligament very small and thin; epidermis yellow with green bands; anterior cicatrices confluent; posterior cicatrices confluent; dorsal cicatrices none; cavity of the shell deep and rounded; cavity of the beaks very shallow; dorsal line irregularly curved; nacre beautifully salmon-coloured, having a deep margin.

Remarks.—But a single specimen of this species has come under my notice. In its general form it resembles *An. decora*, (nobis.) It is, however, a smaller species, has a broader margin, and is less inflated. The alternate bands of yellow and green give it an agreeable aspect. The nacre is of a delicate colour and very satin-like.

ANODONTA FERRUGINEA. Plate 19, Fig. 43.

Testâ ellipticâ, inflatâ; valvulis tenuibus; natibus prominentibus, ad apices minutè undulatis, ferrugineis; epidermide tenebroso-fuscâ, politâ; margaritâ cæruleo-albâ et iridescente.

Shell elliptical, inflated; valves thin; beaks prominent, minutely undulate at the tips, ferruginous; epidermis dark brown and polished; nacre bluish-white and iridescent.

Hab. Simon's Creek, Indiana. T. G. Lea.
My Cabinet, and Cabinet of T. G. Lea.

Diam. .1, Length 1.3, Breadth 2.4 inches.

Shell elliptical, inflated, posterior margin biangular; substance of the shell thin; beaks ferruginous, prominent, with three or four nearly concentric small folds at the tip; ligament long and thin; epidermis dark brown and shining; anterior cicatrices confluent; posterior cicatrices confluent; dorsal cicatrices placed nearly in the centre of the cavity of the beaks; cavity of the shell deep and rounded; cavity of the beaks shallow; dorsal line slightly curved under the beaks; nacre bluish-white and iridescent.

Remarks.—This is a small species with remarkably ferruginous beaks, and dark brown, sometimes greenish epidermis. Indistinct rays may be observed on some individuals. The lines of growth are dark, and in some specimens the basal margin is disposed to be emarginate. It is somewhat allied to *An. undulata*, Say, but differs very much in colour and undulations of the beaks.

ANODONTA FOOTIANA. Plate 20, Fig. 44.

Testâ ellipticâ, inflatâ, inæquilaterali; valvulis subtenuibus; natibus subprominentibus, ad apices undulatis; epidermide luteo-fuscâ; margaritâ cæruleo-albâ et iridescente.

Shell elliptical, inflated, inequilateral; valves thin; beaks rather prominent, undulate at the tips; epidermis yellowish-brown; nacre bluish white and iridescent.

Hab. Vicinity of Fort Winnebago. Dr. Foot.
My Cabinet.

Diam. 1.2, Length 1.9, Breadth 3.3 inches.

Shell elliptical, inflated, inequilateral, angular behind; substance of the shell rather thin; beaks rather prominent, undulate at the tip; ligament rather short and thin; epidermis yellowish-brown; anterior cicatrices confluent; posterior cicatrices confluent; dorsal cicatrices none; cavity of the shell rather deep and rounded; cavity of the beaks shallow; dorsal line rather curved; nacre bluish-white and iridescent.

Remarks.—Two perfect individuals, and two valves of this species were received among other specimens of the *Naïades* from Dr. Foot of the United States Army. This species seems to be allied to *An. fragilis*, Lam., but is a larger and stronger shell. The lines of growth are distinct and very close together.

ANODONTA MARYATTANA. Plate 20, Fig. 45.

Testâ transversâ, valdè inflatâ, gibbosâ, valdè inæquilaterali; valvulis tenuibus; natibus prominentibus, ad apices undulatis; epidermide virido-luteâ; margaritâ argenteâ et iridescente.

Shell wide, very much inflated, gibbous, very inequilateral; valves thin; beaks prominent, undulated at the tip; epidermis greenish yellow; nacre silvery and iridescent.

Hab. Vicinity of Fort Winnebago. Capt. Maryatt, R. N.
My Cabinet.

Diam. 1.8, Length 2.2, Breadth 4 inches.

Shell wide, very much inflated, gibbous, very inequilateral; substance of the shell very thin and transparent; beaks prominent and doubly undulate at the tip; ligament thin and long; epidermis greenish-yellow; anterior cicatrices confluent; posterior cicatrices confluent; dorsal cicatrices none; cavity of the shell very deep; cavity of the beaks rather deep and rounded; dorsal line slightly curved; nacre silvery and iridescent.

Remarks.—Among many fine specimens of the *Naïades* brought by Capt. Maryatt from a tour up the Mississippi, &c., was a single specimen of this *Anodonta.* It is more inflated than any species I am acquainted with except the *An. gibbosa*, Say. Like it, it has that irregular swelling over the portion embracing the umbonial slope. It differs in being more transverse, and being devoid of rays. The nacre is remarkably thin, silvery and iridescent. The marks of growth are very distinct and widely separate.

ANODONTA COUPERIANA. Plate 20, Fig. 46.

Testâ ellipticâ, valdè inflatâ, gibbosâ; valvulis tenuibus; natibus planulatis, undulatis; epidermide virido-luteâ, obsoletè radiatâ; margaritâ cœruleo-albâ et iridescente.

Shell elliptical, very much inflated, gibbous; valves thin; beaks flattened and undulated; epidermis greenish-yellow, obsoletely radiate; nacre bluish-white and iridescent.

Hab. Hopeton, near Darien, Georgia. J. H. Couper, Esq.
My Cabinet.

Diam. .9, Length 1.5, Breadth 2.1 inches.

Shell elliptical, smooth, polished, very much inflated, gibbous and swollen from the beaks to the basal margin, flattened behind the beaks; basal margin much rounded; substance of the shell very thin; beaks flattened and finely undulate; ligament rather long and very thin; epidermis greenish-yellow, with numerous small rays, darker on the posterior slope, where the rays are very distinct and capillary; anterior cicatrices confluent; posterior cicatrices confluent; dorsal cicatrices none; cavity of the shell very deep and rounded; cavity of the beaks very small; dorsal line slightly curved; nacre bluish-white and iridescent.

Remarks.—This is a very distinct species, and I dedicate it to my friend Mr. Couper, who has done much to elucidate the Natural History of his vicinity. It is remarkable in its form, and more nearly allied to *An. gibbosa*, Say, than any other species with which I am acquainted. It differs in being more transverse, being less inflated, having flatter beaks, in being smaller and in having the swell of the inflation more towards the basal margin. Indistinct capillary rays covering the whole disk, diverge from the beaks, and are more distinct on the posterior slope where there are generally two yellow rays. The beaks are so much flattened as scarcely to rise above the dorsal margin.*

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* Accompanying this species I received from Mr. Couper several specimens of an *Anodonta* which so closely resembles my specimens of *Anodonta incerta*, from the Ohio, that I conclude they must be the same species. If it prove so, it will be the first which I have seen coming from the eastern side of the Allegheny range.

Melania Boykiniana. Plate 6, Fig. 59.

Testâ granulatâ, elevatâ, subturritâ, ad carinam tuberculatâ; suturis impressis; aperturâ elongatâ, ovatâ.

Shell granulate, elevated, somewhat turrited, at the carina tuberculate; sutures impressed; aperture long, ovate.

Hab. Chattahoochee River, Columbus, Geo. Dr. Boykin.
My Cabinet.

Diam. 3.8, Length 9.4 of an inch.

Remarks.—This is a very distinct and remarkable species. Although many individuals differ, the prevailing character is to have the whole of the whorls covered with numerous granulate, revolving lines, generally bearing a purple or brown line. In some the tubercles of the carina assume the character of folds.

Melania catenoides. Plate 6, Fig. 60.

Testâ granulatâ, elevato-conoideâ, lineatâ; apice plicatâ; suturis parvis; aperturâ ovatâ.

Shell granulate, elevated, conoidal, lined; apex folded; sutures small; aperture ovate.

Hab. Chattahoochee River, Columbus, Geo. Dr. Boykin.
My Cabinet.

Diam. .43, Length .93 of an inch.

Remarks.—This species differs from the *M. Boykiniana*, in being without tubercles and carina. The coloured revolving hair-like lines are numerous, and being pitted, present the appearance of a chain. Some of the old specimens are quite black, while the younger ones are green or yellow. In some cases where the apex is eroded or worn off and the shell black and old, it looks like *M. Virginica*, (Say,) as no grains can be observed.

Carocolla Cumberlandiana. Plate 6, Fig. 61.

Testâ lenticulatâ, carinatâ, striatâ, albidâ, fusco-notatâ, latè umbilicatâ, ad carinam supernè et infernè impressâ; anfractibus quinis; aperturâ angulatâ, intus sulcatâ; labro acuto.

Shell lenticular, carinate, striate, whitish, brown-spotted, widely umbilicate, impressed above and below the carina; whorls five; aperture angular, within furrowed; lip acute.

Hab. Cumberland Mountains, near Jasper, Tenn. Dr. Currey.
My Cabinet, and Cabinets of Dr. Currey and Mr. Edgar.
Diam. .54, Length .14 of an inch.

Remarks.—Among many species of land shells which I owe to Dr. Currey's kindness, were two individuals of this Carocolla, which does not appear to have been before noticed. It has some resemblance to *H. alternata*, (Say,) but may at once be distinguished by its depressed, flat, lenticular form and carina. It is a very interesting species, and has a remarkable furrow above and below the carina: all the whorls, are visible in the umbilicus, and are striate all over.

Cyclostoma Cincinnatiense. Plate 6, Fig. 62.

Testâ elevato-conicâ, lævi, nitidâ, diaphanâ, umbilicatâ; anfractibus senis; apice obtuso; labro margine reflexo.

Shell elevated in the form of a cone, smooth, shining, transparent, umbilicate; whorls six; apex obtuse; margin of the lip reflected.

Hab. Vicinity of Cincinnati. T. G. Lea.
My Cabinet, and Cabinet of T. G. Lea.
Diam. .13, Length .22 of an inch.

Remarks.—A small species which has been sent to me several times by my brother, who seems first to have observed it. It is about the size and nearly of the colour of *Paludina limosa*, Say. It is found on wet earth and roots of trees, on the margin of a small stream near Cincinnati.

Continuation of Mr. Lea's Paper on Fresh Water and Land Shells.

Read February 19th, 1841.

In a paper read before the Society July 15th, 1837, I gave the result of some observations made in regard to the anatomy, gestation and geographical distribution of the family *Naïades*, and I mentioned at the time that it was my intention to pursue the subject. Circumstances, however, have prevented my undertaking the thorough examination of the habits of the species and their structure, which I intended. At my request, however, my brother T. G. Lea has made some valuable observations during the last three years at Cincinnati, where these shells are numerous, and the size often large. A digest of these observations has been made by him, and the result, though not entirely satisfactory, will make some advance towards a knowledge of the periods of some of the species.

Sexual difference is no longer a matter of doubt,* but the period and mode of *impregnation*, as well as the length of *gestation* and the time of *parturition*, are either unknown or but partially understood.

At page 52, Vol. 6, of the Transactions, I mentioned having seen in a single instance the ejectment of a number of sacciform oviducts in quite a rapid succession from the *Unio complanatus*. Dr. Kirtland has since, as he informs me by letter, "twice seen the females of *Unio cylindricus* throw off their ova *per saltum*, or with a kind of jet. The portions discharged were collections of a vast number of individuals, aggregated in oblong masses, conforming with the shape of the cells of the ovarium. Soon after they were discharged, they appeared to crumble to pieces, and the several individuals fell down among the sand."

These observations corroborate mine, and we may conclude that we have one fact established in two species in regard to parturition.

The *Anodontæ*, so far as I have been able to observe them, are ovoviviparous, but, whether they, as some species of the *Uniones* do, attach themselves when young by a byssus, I have not had the means to determine. In Silliman's Journal for July, 1840, Dr. Kirtland published an interesting account of this attachment with figures. He had communicated the fact of his observations to me by letter several years before, and I then informed him that I had in a single instance some years before observed it in the Schuylkill.

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* Transactions, vol. vi. page 49.

The following tabular view and notes form the matter digested by my brother, from his extensive notes during the years 1838, '39, and '40, mentioned above.

No. 1.

No ova found in the oviducts. The ovaria not examined except in *Unio Æsopus*, which had ova in the ovarium. Examined in the Autumn of 1838.

	Specimens.
Unio Æsopus,	1
varicosus,	16
metanever,	26
cornutus,	40
cylindricus,	18
cuneatus,	20
gibbosus,	19
sulcatus,	25
pileus,	7
triangularis,	5
pustulatus,	5
pustulosus,	18
asperrimus,	19
tuberculatus,	7
trigonus,	6
elegans,	12
formosus,	9
ebenus,	14
fragosus,	15
Cooperianus,	40
monodontus,	7
verrucosus,	7
undatus, and pyramidatus,	30
lachrymosus,	5
dehiscens,	7
plicatus,	8

No. 2.

Ova in the ovarium in the Autumn of 1839.

U. cylindricus,	6
pyramidatus,	2
undatus,	5
varicosus,	2
tuberculatus,	3
gibbosus,	2
pustulosus,	7
pustulatus,	3
cornutus,	6
asperrimus,	3
plicatus,	1
metanever,	1
cuneatus,	2
Æsopus,	2

In March, 1840.

U. parvus,	10
lachrymosus,	7

In July.

U. rubiginosus,*	1

* Six others of this species, taken at the same time, had ova in the oviducts. See column, No. 4.

No. 3.

Ova in the oviducts in the Autumn of 1838.

U. perplexus,	16
foliatus,	18
irroratus,	12
retusus,	7
securis,	8
phaseolus,	8
ovatus,	1
gracilis,	3
alatus,	1
lævissimus,	4
tenuissimus,	5
ridibundus,	3
ellipsis,	4
circulus,	1
crassus,	7
rectus,	1
personatus,	1
multiplicatus,	4
occidens,	3
compressus,	1
camelus,	4
orbiculatus,	3
multiradiatus,	1
Marg. complanata,	1
rugosa,	2
An. edentula,	6
Ferussaciana,	4

In Autumn, 1839.

U. lævissimus,	2
multiplicatus,	1
alatus,	1
rectus,	3
plicatus,	3
crassus,	1
ovatus,	1
An. plana,	21
incerta,	3

No. 4.

Ova in the oviducts, at various dates in 1840.

March.

U. circulus,	1
occidens,	4
compressus,	10
luteolus	11
tenuissimus,	1
Marg. rugosa,	1
calceola,	1
complanata,	2
An. Wardiana,	2
incerta,	2

May 16.

U. lachrymosus,	2

Some minute ova were also found in the ovaria of these two specimens.

July and August.

U. plicatus,	1
patulus,	5
rubiginosus,	6
multiradiatus,	2
fabalis,	1
circulus,	1
gibbosus,	1
luteolus,	1
An. plana,	2

Sept. 5th.

U. compressus,	2

Oct. 12th.

U. occidens,	4
luteolus,	2
Marg. rugosa,	1
An. edentula,	1
Ferussaciana,	2

"In column No. 1, no ova were found in the oviducts of any of the enumerated species. They were carefully examined, as regards the oviducts, but as to the ovaria, they were not, except in the single specimen of *Unio Æsopus*. If the ovaria had been examined, no doubt the ova would have been found in all of them, exclusive of *sulcatus*, *pileus* and *formosus*. They were all taken from September 19th, to November 13th, 1838.

"In column No. 2, many of the species contained in column No. 1, were examined again in the Autumn of 1839, and found to have ova in the ovaria and none in the oviducts. The others in column No. 1, that I had not an opportunity to examine would, I think, have been found in the same condition. In this column it may be observed, that *U. parvus* and *lachrymosus* had ova in the ovaria in March, also a single specimen of *U. rubiginosus* taken at Waynesville in July. As this was not as advanced as six others taken at the same time, their period is probably irregular.

"Column No. 3, contains the species observed with the oviducts charged with young in the Autumn of 1838 and '39.

"Column No. 4, contains the species with oviducts charged with young at various periods of 1840.—In columns No. 1, and 2, no ova were found in the oviducts.

"I have not been able to come to a satisfactory conclusion respecting the gestation and period at which the *Uniones* discharge their young; that it varies between some groups of the species, I have no doubt.—For instance, take all those in columns No. 1 and 2, which late in the Autumn have no ova transferred to the oviducts, while other groups, in columns No. 3 and 4, have the oviducts charged with young at the same season. The latter probably discharge in the Spring, or early Summer, and the former later.

"In column No. 2, is a *U. plicatus* with ova in the ovarium in Autumn; in No. 4, is one with ova in the ducts in July. Suppose this to have discharged in August, it makes a very long gestation.

"In column No. 4, is a *U. circulus*, with ova in the oviducts, in March, and another with ova in the oviducts, in July. The same species also in column No. 3, with ova in the oviducts, in Autumn. From this I would infer that it is irregular, or breeds more than once a year. In column No. 4, is a *U. luteolus*, with ova in the oviducts, in March, in August and in October. Some that I observed in August had their *branchiæ* so swollen, that they could not shut the valves close. In this case the animal would have discharged in a short time. The same inference applies to this as to *circulus*. Of *U. occidens*, in column No. 4, you will see the same in March and October.

"Few of the species in columns 1 and 2 were found with ova in the oviducts. This is owing to the period at which they must be transferred from the ovarium, which, most likely, is in the spring. I have observed them until the end of November. After that, our river continues too high to take them until July or August. In the interval the young must be perfected and discharged. By reference to my notes, you will find the above facts in detail. The columns are arranged and generalized from them. My observations in 1838–39 and '40, are included in them, and only differ as the economy of the species itself may differ. There will not be found any contradiction.

"The ovarium constitutes much the largest portion of the body. It lies immediately above the foot, forming all the solid part of the body between it and the viscera. In a letter I sent you November 26th, 1838, were three views of a *U. multiplicatus*, the ovarium extending from the superior part of the foot *nearly* to the intestinal canal, and from behind and a little below the stomach to the connexion of the posterior muscle, forming, with the exception of the foot, the larger portion of the whole body. The integuments are thick, and on laying it open it has a fibrous interior with a gelatinous substance, in which are disseminated numerous ova.

"You will find in the notes sent to you in 1838 a description of *both* lobes of the branchiæ on each side, of two specimens of *U. multiplicatus* being charged. In the other specimens examined, but *one* lobe on each side was charged as usual. In another examination, in September, 1839, *both* lobes were charged. Thus, it appears they vary in this species, as they probably do also in *U. rubiginosus*."*

UNIO SAPOTALENSIS. Plate 21, Fig. 47.

Testâ ellipticâ, subinflatâ, inæquilaterali, posticè subbiangulatâ; valvulis crassis; natibus vix prominentibus; epidermide luteâ, densè radiatâ; dentibus cardinalibus subgrandibus; lateralibus magnis subrectisque; margaritâ subaureâ et valdè iridescente.

Shell elliptical, somewhat inflated, inequilateral, subbiangular behind; substance of the shell thick; beaks scarcely prominent; epidermis yellow, very much radiated; cardinal teeth rather large; lateral teeth large and nearly straight; nacre somewhat golden-coloured and very iridescent.

* The *U. rubiginosus* and *multiplicatus*, are the only species observed by my brother to be possessed of oviducts, in both pairs of the *branchiæ*.

Hab. Sapotal River, near Tlocatalpam, Mexico. Dr. Burrough.
Cabinet of Dr. Burrough.

Diam. .1, Length 1.4, Breadth 2.2 inches.

Shell elliptical, somewhat inflated, inequilateral, subbiangular behind, enlarged and somewhat carinate on the umbonial slope, flattened on the umbones and sub-emarginate at base; substance of the shell thick, thinner behind; beaks scarcely prominent; ligament rather short and thick; epidermis yellow, the whole disk being marked with green rays, darker on the posterior slope; cardinal teeth rather large, erect, single in the right and double in the left valve; lateral teeth large and nearly straight; anterior cicatrices distinct; posterior cicatrices confluent; dorsal cicatrices placed in the centre of the cavity of the beaks; cavity of the shell shallow; cavity of the beaks small and angular; nacre somewhat golden-coloured and finely iridescent.

Remarks.—A single specimen only is before me. Its fine rich pearly lustre and beautiful iridescence are very remarkable. I have rarely seen any iridescence in a *Unio* so rich. It has some resemblance to *U. radiatus*, and *U. interruptus*, (nobis,) but may be distinguished from both by the flatness of the umbones and the raised umbonial slope.*

UNIO TECOMATENSIS. Plate 21, Fig. 48.

Testa ellipticâ, inflatâ, inæquilaterali, posticè subbiangulatâ; valvulis crassis; natibus subprominentibus; epidermide subnigrâ, nitida; dentibus cardinalibus magnis; lateralibus magnis subcurvisque; margaritâ vel purpureâ vel salmonis colore tinctâ et iridescente.

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* In addition to the knowledge of the fresh water shells inhabiting the rivers and lakes of the southern part of North America, so assiduously obtained by Dr. Burrough, I am indebted to another friend, Dr. Blanding, for the interesting fact, that the species which I described under the names of *U. Nicklinianus*, (see Trans., vol. 5, page 28,) and *U. discus*, (see vol. 6, page 74,) inhabit the River Moctezuma, in Central America, with the *U. Tampicoensis*. I am indebted to Dr. Blanding, for specimens of these, and his Cabinet may be referred to, as well as Mr. Nicklin's, and Mr. Phillips'; these gentlemen having also received specimens from Dr. B. The *Nicklinianus* seems always to be white in its nacre, while the *discus* varies, some individuals being perfectly white, some rich salmon-coloured, and others of a deep purple. A single valve in my Cabinet displays all these colours.

In some of the specimens of *U. Nicklinianus*, there is a remarkable elevated line on the posterior slope, which in some cases interrupts the folds.

Shell elliptical, inflated, inequilateral, subbiangular behind; substance of the shell thick; beaks somewhat prominent; epidermis nearly black, shining; cardinal teeth large; lateral teeth large and somewhat curved; nacre purple or salmon-coloured and iridescent.

Hab. Tecomate River, near Tlocatalpam, Mexico. Dr. Burrough.
My Cabinet, and Cabinet of Dr. Burrough.
Diam. 1.6, Length 2.5, Breadth 3.5 inches.

Shell elliptical, inflated, inequilateral, subbiangular behind; substance of the shell thick, thinner behind; beaks rather prominent; ligament long and thick; epidermis very dark, nearly black, shining, wrinkled towards the margin; cardinal teeth large, erect and double in both valves; lateral teeth large and somewhat curved; anterior cicatrices distinct; posterior cicatrices confluent; dorsal cicatrices large and placed in a row immediately under the cardinal tooth; cavity of the shell rather deep and rounded; cavity of the beak rather deep and subangular; nacre purple or salmon-coloured and iridescent.

Remarks.—Two specimens only of this species were brought by Dr. Burrough, one of a fine salmon colour, the other of a deep purple. It probably occurs also perfectly white, resembling in this variety of colour many other species, particularly the *U. complanatus.* In form it resembles *U. crassus*, Say, but differs altogether in the colour of the epidermis and the colour of the nacre. I have seen no young specimens, and the beaks of those before me, being much eroded, their character cannot be ascertained. In the colour of the epidermis it resembles old individuals of *U. pliciferus*, (nobis,) but being without the folds and being less transverse, ought not to be confounded with that shell.

UNIO GEORGIANUS. Plate 21, Fig. 49.

Testâ ellipticâ, subcompressâ, inæquilaterali, posticè subangulatâ; valvulis subtenuibus; natibus subprominentibus; epidermide luteo-fuscâ; dentibus cardinalibus parvis; lateralibus brevibus rectisque; margaritâ albâ.

Shell elliptical, rather compressed, inequilateral, subangular behind; substance of the shell rather thin; beaks somewhat prominent; epidermis yellowish brown; cardinal teeth small; lateral teeth short and straight; nacre white.

Hab. Stump Creek, Geo. T. R. Dutton.
Cabinet of Mr. Dutton.
Diam. .6, Length 1.1, Breadth 1.6 inches.

Shell elliptical, rather compressed, inequilateral, subangular behind, somewhat carinate on the umbonial slope; substance of the shell thin, thicker before; beaks somewhat prominent; ligament short and thin; epidermis yellowish brown, finely striate, and with numerous marks of growth, apparently without rays; cardinal teeth small, single in the right and double in the left valve; lateral teeth short and straight with a direction over the cardinal tooth; anterior cicatrices distinct; posterior cicatrices distinct; dorsal cicatrices placed under the posterior part of the cardinal tooth; cavity of the shell small; cavity of the beaks rather shallow and angular; nacre white.

Remarks.—A single specimen only of this shell is before me. It possesses no remarkable characters, but is obviously distinct from any shell with which I am acquainted. It has some resemblance on one side to *U. Ravenelianus*, (nobis,) and on the other to *cariosus*, Say. The beaks being eroded, I am unable to say what kind of undulations, if any, they may have possessed.

UNIO DUTTONIANUS. Plate 22, Fig. 50.

Testâ valdè transversâ, cylindraceâ, valde inæquilaterali, posticè angulatâ; valvulis subcrassis; natibus vix prominentibus; epidermide tenebroso-fuscâ, obsoletè radiatâ; dentibus cardinalibus minimis; lateralibus longissimis rectisque; margarita albâ et iridescente.

Shell very wide, cylindrical, very inequilateral, angular behind; substance of the shell rather thick; beaks scarcely prominent; epidermis dark brown, obsoletely radiated; cardinal teeth very small; lateral teeth very long and straight; nacre white and iridescent.

Hab. Ogechee Canal, Savannah, Geo. T. R. Dutton.
Cabinet of Mr. Dutton.

Diam. .7, Length .1, Breadth 2.8 inches.

Shell very wide, cylindrical, very inequilateral, angular behind; posterior slope wide, flattened, with two lines from the beaks to the posterior margin; substance of the shell rather thick; beaks scarcely prominent; ligament rather thick and long; epidermis dark brown and very obscurely rayed; cardinal teeth very small, tubercular; lateral teeth very long, thin and straight; anterior cicatrices distinct; posterior cicatrices confluent; dorsal cicatrices small and placed in the centre of the cavity of the beaks; cavity of the shell deep and rounded; cavity of the beaks very small and subangular; nacre white and iridescent.

Remarks.—In its outline this species resembles *U. folliculatus*, (nobis.) It differs in being more cylindrical and in having a much smaller cardinal tooth. The cardinal tooth is very remarkable for its small size, being little more than two small tubercles on the dorsal line. The only specimen before me is white: others may differ in colour. On the sides are a few obscure transverse folds. The breadth and flatness of the posterior slope is very remarkable.

UNIO BIGBYENSIS. Plate 22, Fig. 51.

Testâ subtriangulari, compressâ, inæquilaterali, posticè angulatâ; valvulis subcrassis; natibus prominentibus; epidermide luteâ, valdè radiatâ; dentibus cardinalibus magnis erectisque; lateralibus magnis subrectisque; margaritâ vel albâ vel salmonis colore tinctâ.

Shell sub-triangular, compressed, inequilateral, angular behind; substance of the shell rather thick; beaks somewhat prominent; epidermis yellow, very much rayed; cardinal teeth large and erect; lateral teeth large and nearly straight; nacre white or salmon-coloured.

Hab. Big Bigby Creek, Maury Co., Tenn. T. R. Dutton.
My Cabinet, and Cabinet of Mr. Dutton.

Diam. .8, Length 1.5, Breadth 2.1 inches.

Shell sub-triangular, compressed, inequilateral, angular behind; substance of the shell rather thick, thinner behind; beaks somewhat prominent, undulated at the tip; ligament rather long and thick; epidermis yellow, with numerous broad green rays; posterior slope somewhat carinate and free from rays; cardinal teeth large and erect, disposed to be double in both valves; lateral teeth large, thick and nearly straight; anterior cicatrices distinct; posterior cicatrices distinct; dorsal cicatrices placed under the plate, posterior to the cardinal tooth; cavity of the shell very shallow; cavity of the beaks shallow and angular; nacre white or salmon-coloured.

Remarks.—This species has a strong resemblance to *U. rubiginosus*, (nobis,) in its outline and in its nacre. They are both found occasionally white. When I described *rubiginosus*, I had not seen a specimen with a white nacre. The *Bigbyensis* differs from it in having numerous broad rays, while those on the *rubiginosus,* when it is rayed at all, are usually very obscure. In the cardinal teeth they differ also; those of the *rubiginosus* being flatter, and more spread out. In its yellow epidermis and rays, the *Bigbyensis* resembles the *U. oviformis,* Con. That shell, however, is more oblique, and it may at once be distinguished by the large ovate lunule; the *Bigbyensis* apparently possessing none.

UNIO CROCATUS. Plate 22, Fig. 52.

Testâ ellipticâ, inflatâ, inæquilaterali, posticè angulatâ; valvulis tenuibus; natibus prominentibus; epidermide croceâ, radiatâ, nitidâ; dentibus cardinalibus parvis; lateralibus longis curvisque; margarita salmonis colore tinctâ et iridescente.

Shell elliptical, inflated, inequilateral, angular behind; substance of the shell thin; beaks prominent; epidermis saffron-coloured, radiated, shining; cardinal teeth small; lateral teeth long and curved; nacre salmon-coloured and iridescent.

Hab. Savannah River, Geo. T. R. Dutton.
My Cabinet, and Cabinet of Mr. Dutton.

Diam. .8, Length 1.2, Breadth 1.8 inches.

Shell elliptical, inflated, inequilateral, angular behind, substance of the shell thin, thicker before; beaks prominent; ligament rather thin and short; epidermis saffron-coloured, smooth and shining, with linear rays and numerous regular lines of growth; cardinal teeth small, single in the right and double in the left valve; lateral teeth long and curved; anterior cicatrices distinct; posterior cicatrices confluent; dorsal cicatrices placed in the centre of the cavity of the beaks; cavity of the shell deep; cavity of the beaks deep and angular; nacre salmon-coloured and iridescent.

Remarks.—Two specimens of this species are before me. One has numerous capillary lines radiating from the beak, while the other has but few and very indistinct ones. It is most nearly allied perhaps to *U. ochraceus,* Say; but may be distinguished by the colour of the epidermis, by the teeth being thicker, and by the inflation of the umbones. The posterior slope is without rays, and is somewhat rough.

UNIO RAJAHENSIS. Plate 23, Fig. 53.

Testâ triangulari, inflatâ, inæquilaterali, posticè angulatâ; valvulis crassis; natibus valdè prominentibus; epidermide tenebroso-fuscâ; dentibus cardinalibus magnis; lateralibus sublongis curvisque; margaritâ albâ et valdè iridescente.

Shell triangular, inflated, inequilateral, angular behind; substance of the shell thick; beaks very prominent; epidermis dark brown; cardinal teeth large; lateral teeth rather long and curved; nacre white and very iridescent.

Hab. The Rajah's Tank, Calcutta. Dr. Jay.

My Cabinet, and Cabinets of Dr. Jay and Dr. B. W. Budd of N. Y.

Diam. .8, Length 1.1, Breadth 1.4 inches.

Shell triangular, inflated, inequilateral, angular behind; posterior slope much flattened, cordate, with two curved impressed lines; umbonial slope carinate; beaks very prominent and solid; ligament short, thick and light brown; epidermis dark brown; cardinal teeth large, double in both valves; lateral teeth curved, being more bent near the cardinal tooth, disposed to be double in the right and to be treble in the left valve; anterior cicatrices distinct; posterior cicatrices distinct; dorsal cicatrices placed under the plate between the cardinal and lateral teeth; cavity of the shell rather deep and triangular; cavity of the beaks deep and triangular; nacre beautifully pearly white and very iridescent.

Remarks.—Two specimens of this species only were received from Calcutta by Dr. Jay. One is rather large and more inflated than the other. The beaks of both are eroded. When perfect they may be found to be undulate at tip like *U. corrugatus*, Lam. In the nacre it is very much like that shell, but differs totally in the outline, in its beaks and in being more inflated and more solid. The cleft of the cardinal tooth is nearly parallel with the dorsal line; the lateral teeth are remarkable for their duplication in one valve and triplication in the other.

UNIO CALLOSUS. Plate 23, Fig. 54.

Testâ ellipticâ, compressâ, inæquilaterali, posticè angulatâ; valvulis crassis; natibus prominentibus; epidermide luteo-fuscâ, nitidâ; dentibus cardinalibus parvis; lateralibus longis curvisque; margaritâ albâ et iridescente.

Shell elliptical, compressed, inequilateral, angular behind; substance of the shell thick; beaks prominent; epidermis yellowish brown, shining; cardinal teeth small; lateral teeth long and curved; nacre white and iridescent.

Hab. Ohio Canal, twelve miles below Columbus. Dr. Jay.

Cabinet of Dr. Jay.

Diam. .9, Length 1.4, Breadth 2.2 inches.

Shell elliptical, compressed, inequilateral, angular behind, carinate on the umbonial slope; substance of the shell thick; beaks prominent, ligament rather short and thick; epidermis yellowish brown, darker and wrinkled on the posterior slope; cardinal teeth small, double in both valves; lateral teeth very long and curved; anterior cicatrices distinct; posterior cicatrices distinct; dorsal cicatrices placed under the plate between the cardinal and lateral teeth; cavity of the shell shallow; cavity of the beaks small and angular; nacre white and iridescent.

Remarks.—A single specimen of this shell only is before me. It is without rays. The eroded state of the beaks prevents our knowing if it be undulate at the tip. In outline it resembles some varieties of *U. complanatus.* In the flatness of the sides it is allied to *U. phaseolus,* Hild. But it differs entirely from that species in not being flattened towards the beaks and in being without rays.

ANODONTA MONTEZUMA. Plate 23, Fig. 55.

Testâ obovatâ, subinflatâ, valdè inæquilaterali; valvulis tenuibus; natibus prominentibus; epidermide luteâ viridique, rugosâ; margaritâ albâ et iridescente.

Shell obovate, rather inflated, very inequilateral; substance of the shell thin; beaks prominent; epidermis yellow and green, rough; nacre white and iridescent.

Hab. Central America. Dr. Jay.

Cabinet of Dr. Jay.

Diam. .6, Length 1.1, Breadth 1.6 inches.

Shell obovate, rather inflated, very inequilateral, rounded before and behind; substance of the shell thin; beaks prominent; ligament short and thin; epidermis yellow and green, rough; anterior cicatrices distinct; posterior cicatrices confluent; dorsal cicatrices none; cavity of the shell rather deep and rounded; cavity of the beaks very shallow; nacre white and iridescent.

Remarks.—The specimen for which the above description was made appears to be mature. It may, however, sometimes occur larger. The beaks are too much eroded to observe if they were undulated. The green predominates in the epidermis in the superior part of the disk,—the inferior part is yellow. The epidermis is rough from frequent crimping.

ANODONTA GLOBOSA. Plate 24, Fig. 56.

Testâ rotundâ, valdè inflatâ, inæquilaterali; valvulis tenuibus; natibus prominentibus, undulatis; epidermide viridi, obsoletè radiatâ; margaritâ cœruleo-albâ et iridescente.

Shell rounded, very much inflated, inequilateral; valves thin; beaks prominent and undulated; epidermis green, obscurely radiated; nacre bluish-white and iridescent.

Hab. Concha Lake near Tlocatalpam, Mexico. Dr. Burrough.
My Cabinet, and Cabinet of Dr. Burrough.

Diam. 2.2, Length 2.9, Breadth 4 inches.

Shell rounded, very much inflated, globose, much swollen under the beaks, inequilateral, subangular behind; lines of growth distinct and distant; substance of the shell very thin; margin broad; beaks very prominent, much inflated, and finely undulated at the tip; ligament rather long and thin; epidermis green with occasional interruptions of yellow; anterior cicatrices confluent; posterior cicatrices confluent; dorsal cicatrices none; cavity of the shell very deep and rounded; cavity of the beak large; dorsal line very slightly curved; nacre bluish-white and finely iridescent.

Remarks.—This is the most globose *Anodonta* which has been described. The margin is not quite so rounded as *An. suborbiculata*, Say, but the shell is much more inflated. It has some resemblance to *An. gibbosa*, Say, yet cannot be mistaken for that species, on account of its being devoid of the gibbous character and being more orbicular. It is somewhat angular at the anterior dorsal margin. The undulations at the beaks are small and duplicate. Dr. Burrough brought three specimens only, one of which is much older and larger than that figured. Concha Lake is about twenty leagues south of Vera Cruz.

Read June 18th, 1841.

UNIO ARGENTEUS. Plate 25, Fig. 57.

Testâ obliquâ, oviformis, valdè compressâ, valdè inæquilaterali, posticè subangulatâ; valvulis subcrassis; natibus subprominentibus; epidermide luteo-fuscâ, politâ; dentibus cardinalibus subgrandibus; lateralibus longis subcurvisque; margaritâ argenteâ et iridescente.

Shell oblique, oviform, much compressed, very inequilateral, subangular behind; valves rather thick; beaks somewhat prominent; epidermis yellowish brown, polished; cardinal teeth rather large; lateral teeth long and somewhat curved; nacre silver white and iridescent.

Hab. Holston River, East Tenn. Dr. Troost and Mr. S. M. Edgar.
My Cabinet, and Cabinets of Dr. Troost and Mr. Edgar.

Diam. .8, Length 1.6, Breadth 2.5 inches.

Shell oblique, oviform, much compressed, very inequilateral, subangular behind, and regularly rounded before, with two compressed lines behind the umbonial slope, substance of the shell rather thick, thinner behind; beaks somewhat prominent; ligament rather long and thick; epidermis brown, polished and shining on the superior portion, with regular and somewhat distant lines of growth; cardinal teeth rather large, not much elevated; lateral teeth long, rather thick and slightly curved; anterior cicatrices distinct; posterior cicatrices distinct; dorsal cicatrices placed on the under side of the plate between the cardinal and lateral teeth; cavity of the shell very shallow, cavity of the beaks very shallow and angular; nacre silver white and iridescent.

Remarks.—In a box sent to me by Dr. Troost and Mr. Edgar from the waters of East Tennessee, there was a single specimen of this shell. In form it is most nearly allied to *U. oviformis*, Con., but it differs in being rather more compressed. In colour it differs entirely, being much darker and being devoid of rays.

UNIO SPARSUS. Plate 25, Fig. 58.

Testâ sparsim tuberculatâ, triangulari, subinflatâ, subequilaterali, posticè emarginatâ, ad latus planulatâ; valvulis crassis; natibus elevatis; epidermide luteolâ; dentibus cardinalibus grandibus, lateralibus brevissimus rectisque; margaritâ albâ et iridescente.

Shell sparsely tuberculate, triangular, rather inflated, subequilateral, emarginate behind, flattened at the side; valves thick; beaks elevated; epidermis yellowish; cardinal teeth large; lateral teeth small and straight; nacre white and iridescent.

Hab. Holston River, East Tenn. Dr. Troost and S. M. Edgar.
My Cabinet, and Cabinets of Dr. Troost and Mr. Edgar.
Diam. .8, Length 1.3, Breadth 1.5 inches.

Shell sparsely tuberculate, triangular, rather inflated, subequilateral, emarginate behind, flattened on the side from the beak to the margin, carinate on the umbonial slope and sulcate posteriorly; substance of the shell very thick, thinner behind; beaks elevated; ligament very short and rather thick; epidermis yellowish; cardinal teeth very large; lateral teeth very short and straight; anterior cicatrices distinct; posterior cicatrices distinct; dorsal cicatrices placed on the inferior part of the cardinal tooth; cavity of the shell rather deep; cavity of the beak deep and angular; nacre white and iridescent.

Remarks.—Several specimens of this species have at different times been brought to my attention by Dr. Troost and Mr. Edgar. I hesitated for some time separating it from *U. metanever*, Rafin., which in outline it closely resembles, as well as in the arrow-headed markings. It may be distinguished from that species by the size and rarity of its tubercles, having none of the large ones on the umbonial slope which so well characterize the *metanever*. It is also closely allied to *U. tuberosus*, (nobis,) but that shell differs in being thickly covered with tubercles.

UNIO REGULARIS. Plate 25, Fig. 59.

Testâ regulariter ellipticâ, subinflatâ, inæquilaterali; valvulis subtenuibus; natibus vix prominentibus; epidermide luteo-fuscâ, radiatâ; dentibus cardinalibus minutis, lateralibus longis curvisque; margaritâ cœruleâ et iridescente.

Shell regularly elliptical, somewhat inflated, inequilateral; valves rather thin; beaks scarcely prominent; epidermis yellowish brown, radiated; cardinal teeth very small; lateral teeth long and curved; nacre bluish and iridescent.

Hab. French Broad River, East Tenn. Dr. Troost and S. M. Edgar.
My Cabinet, and Cabinets of Dr. Troost and Mr. Edgar.
Diam. .8, Length 1.3, Breadth 2.3 inches.

Shell regularly elliptical, somewhat inflated, inequilateral, rounded on the umbonial slope; substance of the shell rather thin, thicker before; beaks scarcely prominent; epidermis yellowish brown with rather regular rays over the whole disk; cardinal teeth very small, single in the right and double and deeply cleft in the left valve; lateral teeth long and curved along the dorsal margin; anterior cicatrices distinct; posterior cicatrices confluent; dorsal cicatrices placed within the cavity on the under side of the cardinal teeth; cavity of the shell rather deep and rounded, cavity of the beaks very shallow and slightly angular; nacre bluish and iridescent.

Remarks.—In its regular elliptical form this shell resembles *U. radiatus.* It also resembles *U. pictus*, nobis, in some degree, but is more inflated and a much darker-coloured shell. The teeth are remarkably small, and in the three specimens before me disposed to be carious.

UNIO MÆSTUS. Plate 26, Fig. 60.

Testâ ellipticâ, subinflatâ, valdè inæquilaterali; valvulis subcrassis; natibus prominulis; epidermide tenebroso-fuscâ, rugoso-striatâ; dentibus cardinalibus parvis, lateralibus longis curvisque; margaritâ atro-purpureâ et iridescente.

Shell elliptical, somewhat inflated, very inequilateral; valves somewhat thick; beaks somewhat prominent; epidermis dark brown, roughly striate; cardinal teeth small; lateral teeth long and curved; nacre dark purple and iridescent.

Hab. French Broad River, East Tenn. Dr. Troost and S. M. Edgar.
My Cabinet, and Cabinets of Dr. Troost and Mr. Edgar.

Diam. .8, Length 1.1, Breadth 2 inches.

Shell elliptical, inflated, rounded on the umbonial slope, equally rounded before and behind, very inequilateral; substance of the shell somewhat thick, thinner behind; beaks somewhat prominent, placed near to the anterior margin; ligament rather short and thin; epidermis dark brown, nearly black and roughly striate; cardinal teeth small, single in the right and double and deeply cleft in the left valve; lateral teeth long, thin and somewhat curved; anterior cicatrices distinct; posterior cicatrices confluent; dorsal cicatrices placed across the cavity of the beaks; cavity of the shell rather deep and rounded; cavity of the beaks very small; nacre dark purple and iridescent.

Remarks.—This species is most nearly allied to *U. glans*, nobis, but is larger, more transverse, and has a rougher epidermis. In the purple nacre they resemble each other—The beaks of the two specimens before me are eroded, and therefore the character of the tips cannot be given. One of the specimens is less elliptical than the other, and disposed to be angular behind.

UNIO BRUMBYANUS. Plate 26, Fig. 62.

Testâ ellipticâ, inflatâ, inæquilaterali, posticè subbiangulatâ; valvulis crassis; epidermide nigrâ, politâ; dentibus cardinalibus subgrandibus, lateralibus brevibus subrectisque; margaritâ albâ et iridescente.

Shell elliptical, inflated, inequilateral, subbiangular behind; valves thick; epidermis black, polished; cardinal teeth rather large; lateral teeth short and straight; nacre white and iridescent.

Hab. Warrior River, Tuscaloosa, Alabama. Prof. Brumby.
Cabinet of Dr. Griffith.

Diam. .6, Length .8, Breadth 1.2 inches.

Shell elliptical, inflated, inequilateral, subbiangular behind, disposed to be biangular on the umbonial slope, raised on the umbones; substance of the shell thick, thinner behind; ligament thin and short; epidermis black, polished and shining on the superior portion; cardinal teeth rather large, conical, single in the right and double in the left valve; lateral teeth short and straight; anterior cicatrices confluent; posterior cicatrices confluent; dorsal cicatrices placed on the under side of the plate between the cardinal and lateral teeth; cavity of the shell rather deep; cavity of the beaks rather deep and angular; nacre pearly white and iridescent.

Remarks.—This little species exteriorly resembles *U. glans*, nobis, but is rather more angular, and is higher on the umbones,—interiorly it differs in having a white nacre. It is to be regretted that the only specimen sent is in the beaks quite imperfect. This is the only *Unio* sent to Dr. Griffith by Prof. Brumby, and to him I dedicate it.

Read October 21st, 1842.

UNIO DARIENSIS. Plate 26, Fig. 61.

Testâ oblongâ, subinflatâ, inæquilaterali, posticè perangulatâ, ad laterâ planulatâ; valvulis subcrassis; natibus prominulis; epidermide luteo-fuscâ; dentibus cardinalibus compressis, lateralibus longissimis lamellatisque; margaritâ albâ.

Shell oblong, subinflated, inequilateral, angular behind, flattened on the sides; valves somewhat thick; beaks rather prominent; epidermis yellowish brown; cardinal teeth compressed; lateral teeth long and lamellar; nacre white.

Hab. Near Darien, Georgia. J. H. Couper, Esq.
My Cabinet, and Cabinet of Mr. Couper.

Diam. 1.2, Length 1.8, Breadth 2.3 inches.

Shell oblong, rather inflated, inequilateral, with an elevated, rather acute angle on the umbonial slope, and flattened on the sides; substance of the shell rather thick, thinner behind; beaks rather prominent and flattened; ligament rather long and somewhat thick; epidermis yellowish brown, and obsoletely rayed; posterior slope elevated into a prominent carina and corrugate; cardinal teeth rather small, compressed; lateral teeth long, lamellar and nearly straight; anterior cicatrices distinct; posterior cicatrices confluent; dorsal cicatrices placed under the plate posterior to the cardinal tooth; cavity of the shell deep and angular; cavity of the beaks rather shallow; nacre white.

Remarks.—This shell is remarkable for its high, acutely angular umbonial slope, and its flattened sides. Having but a single specimen before me, and that with eroded beaks, I am unable to say any thing respecting the undulations of the beaks. On the sides near to the basal margin there are four or five indistinct folds, but this may not be found to be permanent with the species. In its acute angle and flattened side it has a strong resemblance to *An. angulata*, (nobis.) It seems to be more nearly allied to *U. Congaræus*, (nobis,) than to any other *Unio*.

UNIO HALEIANUS. Plate 27, Fig. 63.

Testâ ellipticâ, subinflatâ, inæquilaterali; valvulis subtenuibus; natibus prominulis, ad apicem undulatis; epidermide tenebroso-fuscâ, striatâ; dentibus cardinalibus magnis, compressis, lateralibus longis subcurvisque; margaritâ albâ et iridescente.

Shell elliptical, subinflated, inequilateral; valves rather thin; beaks rather prominent, undulated at the tip; epidermis very dark brown, striate; cardinal teeth large, compressed; lateral teeth long and somewhat curved; nacre white and iridescent.

Hab. Mississippi River, thirty miles above N. Orleans. Josiah Hale, M. D.
My Cabinet.

Diam. .1, Length 1.5, Breadth 2.8 inches.

Shell elliptical, rather inflated, inequilateral, with a thin, depressed line from the beak to the posterior margin; substance of the shell rather thin; beaks rather prominent, with nearly concentric undulations at the tip; ligament rather long and thin; epidermis very dark brown, nearly black, striate in thin laminæ on the inferior portion of the valves; cardinal teeth large, compressed, elevated, disposed to be double in both valves; lateral teeth long, somewhat curved and lamellar; anterior cicatrices distinct; posterior cicatrices confluent; dorsal cicatrices placed across the centre of the cavity of the beaks; cavity of the shell rather deep; cavity of the beaks shallow and subangular; nacre pearly white and iridescent.

Remarks.—This shell is of a very regular ellipse, and has more resemblance to the *U. parvus*, Barnes, than any other species with which I am acquainted. It is, however, much larger, being quite four times the size of the largest *parvus* I have seen from the vicinity of New Orleans, where they occur largest. Its beaks have nearly the same kind of undulations. A single specimen was given to my brother T. G. Lea by Dr. Hale of Alexandria, Louisiana, after whom I name it. This specimen is now in my Cabinet. I do not know if Dr. Hale got other specimens.

UNIO FOREMANIANUS. Plate 27, Fig. 64.

Testâ triangulari, compressâ, inæquilaterali, posticè angulatâ, ad latera planulatâ; valvulis crassis; natibus prominentibus; epidermide luteâ, valdè radiatâ; dentibus cardinalibus crassis, lateralibus crassis rectisque; margaritâ albâ.

Shell triangular, compressed, inequilateral, angular behind; valves thick; beaks prominent; epidermis yellow, much radiated; cardinal teeth thick; lateral teeth thick and straight; nacre white.

Hab. Coosa River, Alabama. Dr. Brumby.
My Cabinet, and Cabinets of Dr. Foreman and Dr. Brumby.

Diam. .7, Length 1.2, Breadth 1.6 inches.

Shell triangular, compressed, inequilateral, angular on the umbonial slope and flattened on the sides; substance of the shell very thick, thinner behind; beaks very prominent and angular; epidermis yellow with numerous capillary wavy rays; ligament short and thick; posterior slope slightly elevated; cardinal teeth thick; lateral teeth short and straight, the plate between these teeth being abruptly arched; anterior cicatrices distinct; posterior cicatrices distinct; dorsal cicatrices placed under the plate posterior to the cardinal tooth; cavity of the shell shallow and angular; cavity of the beaks very shallow and angular; nacre white.

Remarks.—This is an interesting species somewhat allied to *U. formosus*, and *U. securis.* It differs from the former in being more compressed, and in having capillary rays,—from the latter in not being so much compressed, and being destitute of the catenoid rays. I owe to Dr. Foreman's kindness the examination of two specimens which he received among other fine shells from Dr. Brumby, of Tuscaloosa, Alabama. Neither of the specimens are perfect enough on the beaks to ascertain what kind of undulations they may have in a perfect state. The older and more worn specimen is by no means as triangular as the other. The capillary wavy rays cover nearly the whole disk.

ANODONTA DUNLAPIANA. Plate 27, Fig. 65.

Testâ ellipticâ, inflatâ, subcylindraceâ, transversè vittatâ; valvulis tenuibus; natibus prominulis, undulatis; epidermide nitidâ, luteolâ, obsoletè radiatâ; margaritâ albâ et iridescente.

Shell elliptical, inflated, subcylindrical, transversely banded; valves thin; beaks slightly prominent and undulated; epidermis shining, yellowish, obsoletely rayed; nacre white and iridescent.

Hab. South Carolina. Mrs. Dunlap.
My Cabinet, and Cabinet of Mrs. Dunlap of Salem, Mass.

Diam. 1.5, Length 1.6, Breadth 3.4 inches.

Shell elliptical, smooth, polished, very much inflated, somewhat cylindrical, having transverse green bands; substance of the shell thin; beaks slightly prominent and undulate at the tip; ligament long and very thin; epidermis polished, yellowish, interrupted by green transverse bands, with numerous small rays darker on the posterior slope, where they are very distinct and capillary; anterior cicatrices confluent; posterior cicatrices confluent; dorsal cicatrices none; cavity of the shell deep and rounded; cavity of the beaks very small; dorsal line nearly straight; nacre white and iridescent.

Remarks.—Mrs. Dunlap, whose name it gives me pleasure to place to this shell, has favoured me with three specimens of this beautiful *Anodonta*, all of which have the remarkable green bands mentioned. It has some resemblance to *An. fluviatilis*, with some of the characters of *An. Couperiana*, (nobis.) It is less oblique than the former species, and more cylindrical, and has the peculiar capillary rays of the latter species. It differs from *An. Couperiana*, in being a larger species, in being without the gibbous character, in being less rayed and in being thicker,—the nacre is also less blue, there being a slight pinky hue in the *Dunlapiana*. On the posterior slope on each valve there are two distinct green rays passing from the beaks to the posterior margin.

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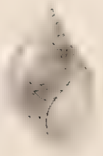
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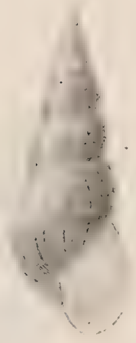
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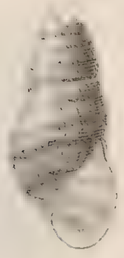
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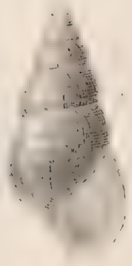
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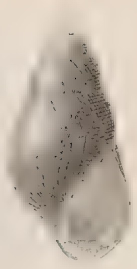
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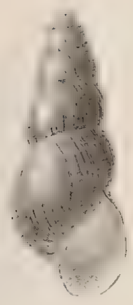
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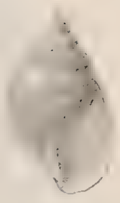
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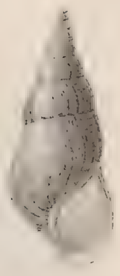
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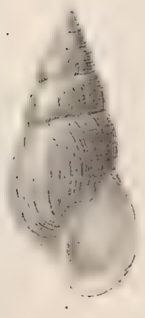
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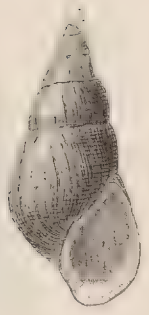
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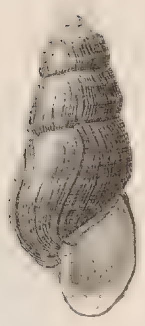
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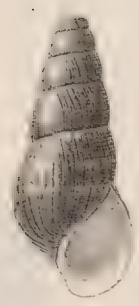
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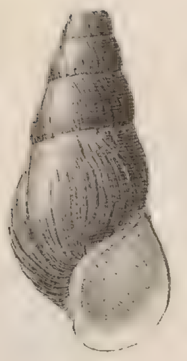
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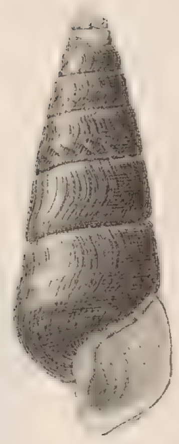
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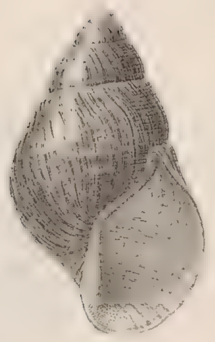
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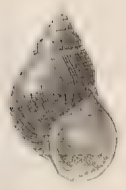
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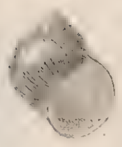
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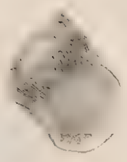
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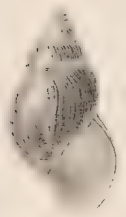
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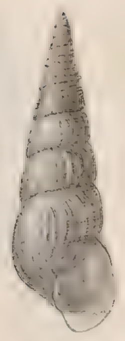
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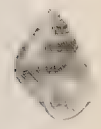
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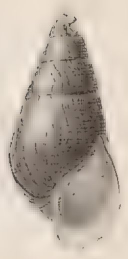
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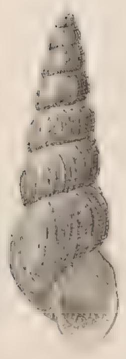
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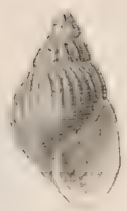
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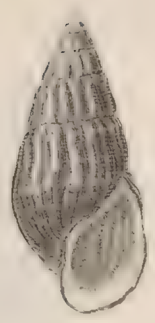
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3 ,, *lævigata*
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6 ,, *dubiosa*
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8 M. *rufa*
9 ,, *fusiformis*
10 ,, *clavæformis*
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12 ,, *subsolida*
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14 ,, *subcylindracea*
15 ,, *sordida*
16 M. *regularis*
17 ,, *fuliginosa*
18 ,, *Nickliniana*
19 ,, *viridis*
20 ,, *occidentalis*
21 ,, *Niagarensis*
22 ,, *globula*
23 ,, *altilis*
24 M. *strigosa*
25 ,, *virgata*
26 ,, *tenebrosa*
27 ,, *teres*
28 ,, *obtusa*
29 ,, *Leconteana*
30 ,, *corrugata*

Drawn & Engraved by Oscar A. Lawson.

MELANIA &c

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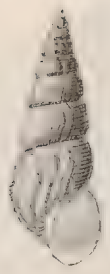
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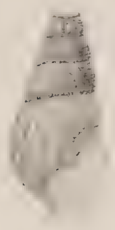
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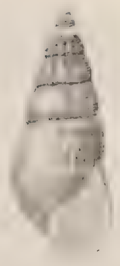
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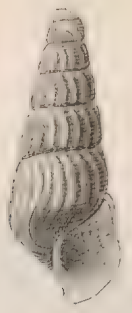
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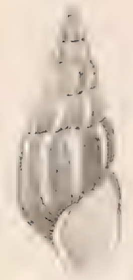
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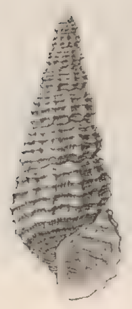
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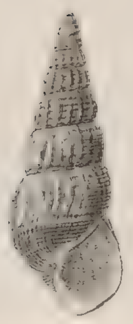
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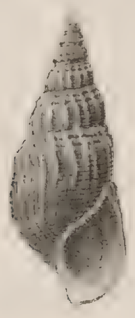
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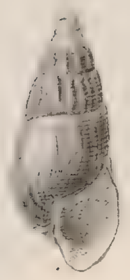
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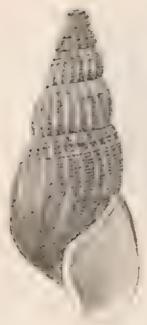
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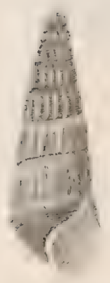
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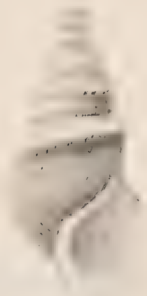
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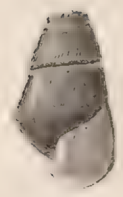
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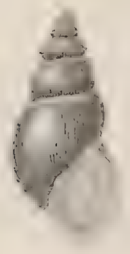
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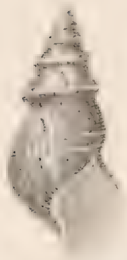
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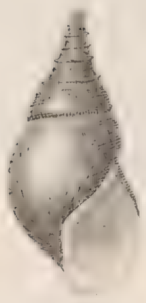
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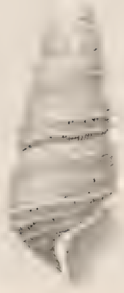
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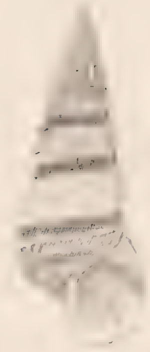
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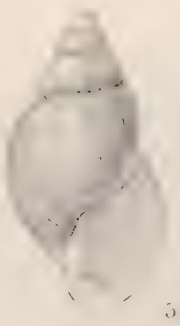
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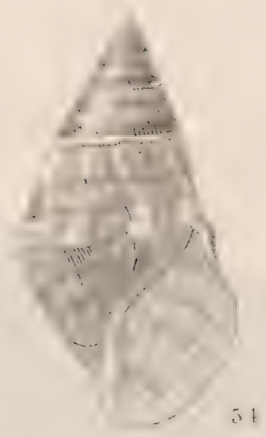
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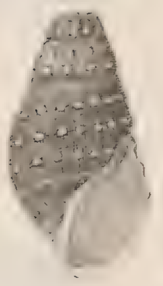
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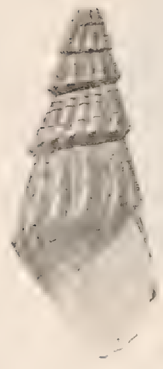
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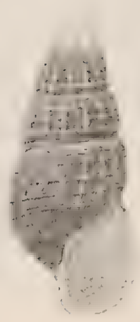
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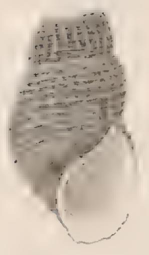
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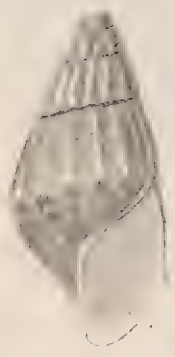
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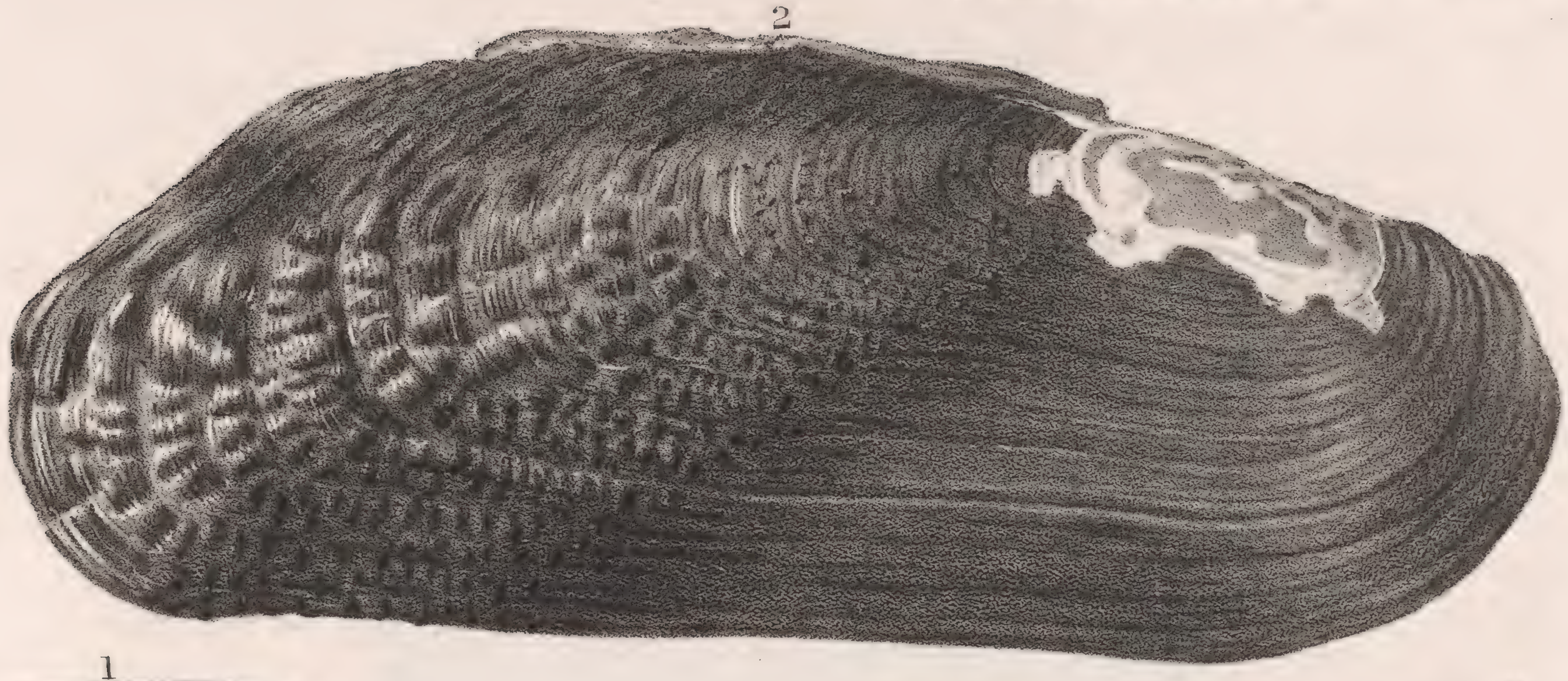
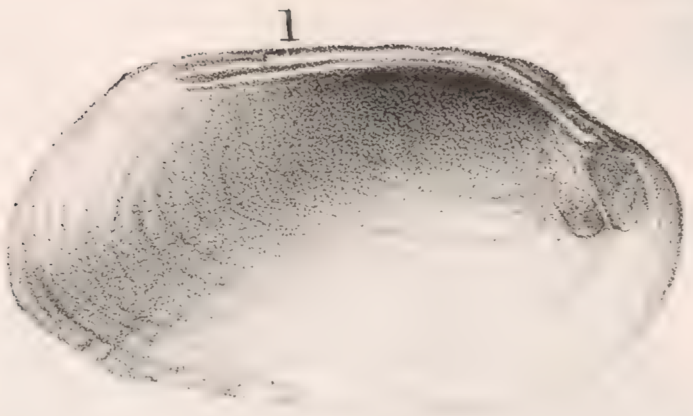
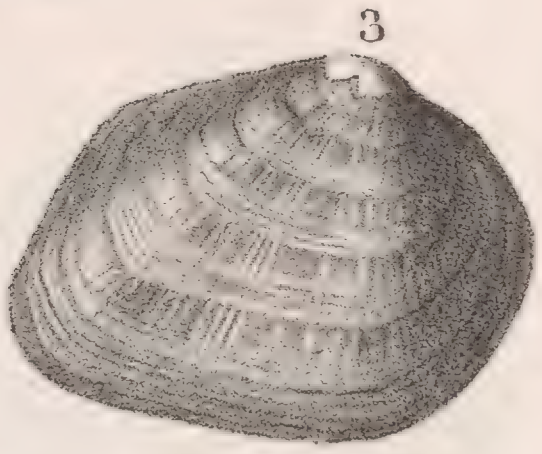
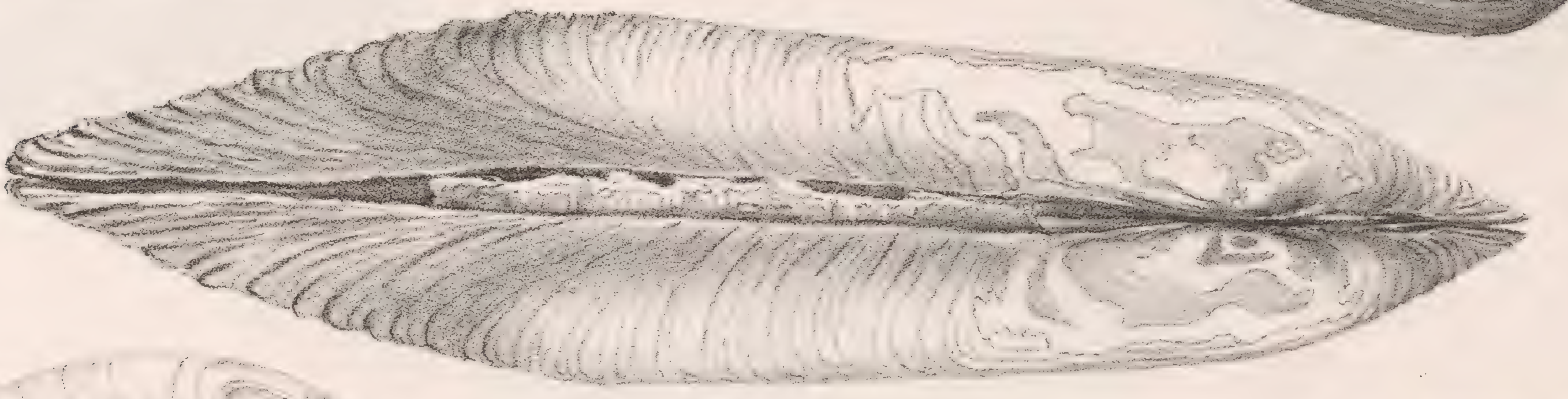
61

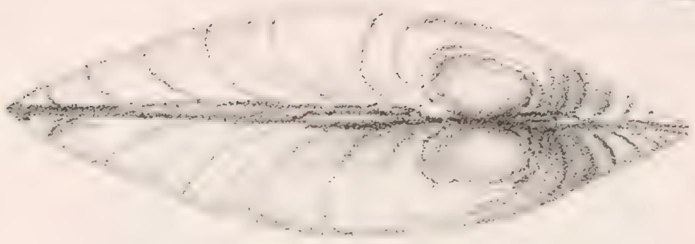
31	M. monozonalis.	39	M. costulata	47	M. Wardiana.	55	M. Holstonia
32	,, terebralis	40	,, nitens	48	,, sulcosa	56	,, caliginosa
33	,, columella	41	,, plicatula	49	,, striata	57	,, nodulosa
34	,, blanda	42	,, concinna	50	,, pilula	58	,, Cincinnatiensis
35	,, crebri-costata.	43	,, Babylonica	51	,, circincta	59	,, Boykiniana
36	,, Curreyana	44	,, exarata	52	,, venusta	60	,, catenoides
37	,, Edgariana	45	,, Potosiensis	53	,, Florentiana	61	,, Carocolla Cumberlandiana
38	,, decora	46	,, acuto-carinata	54	,, Duttoniana.	62	,, Cyclostoma Cincinnatiense

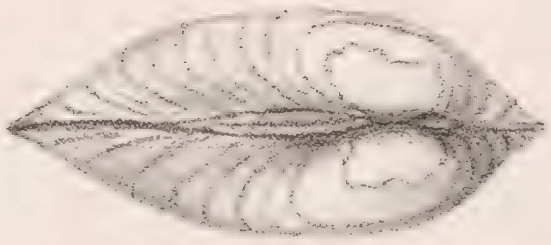


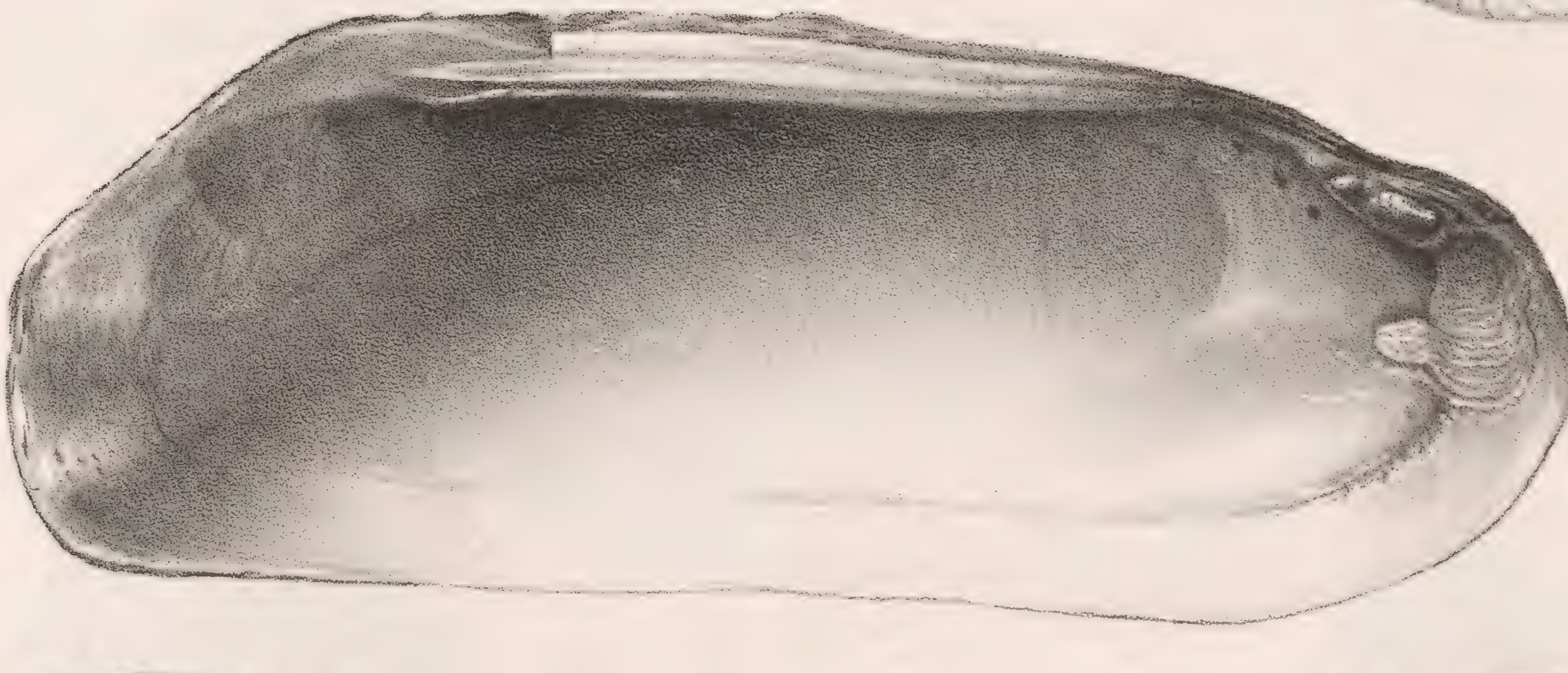


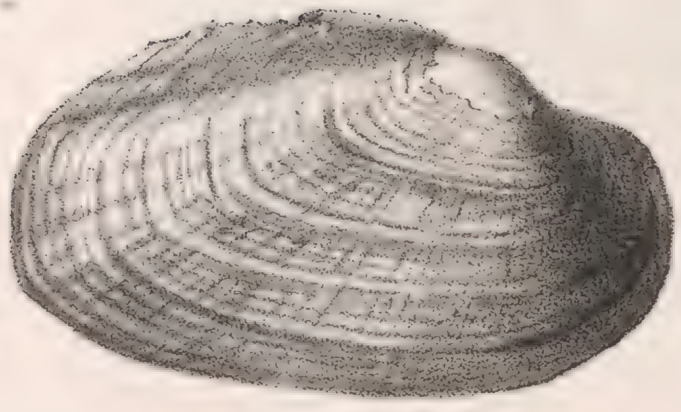


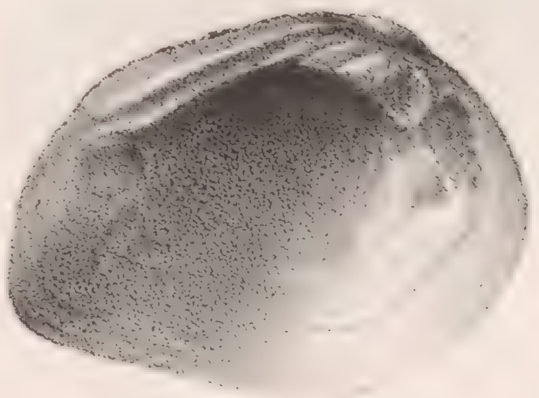








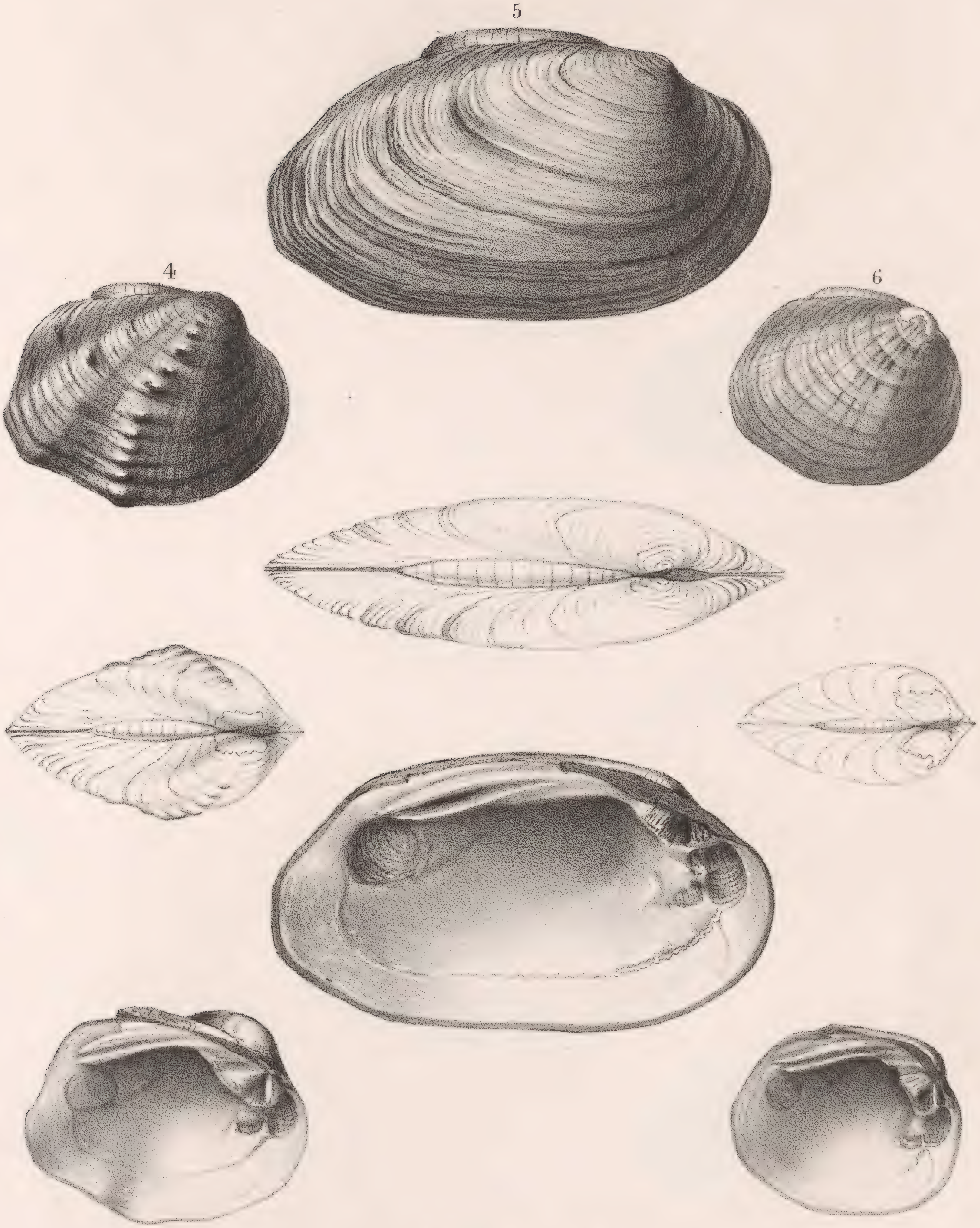




1. *Unio exiguus.*
2. *Unio cucumoides*
3. *Unio cuneolus.*

J. T. French del.

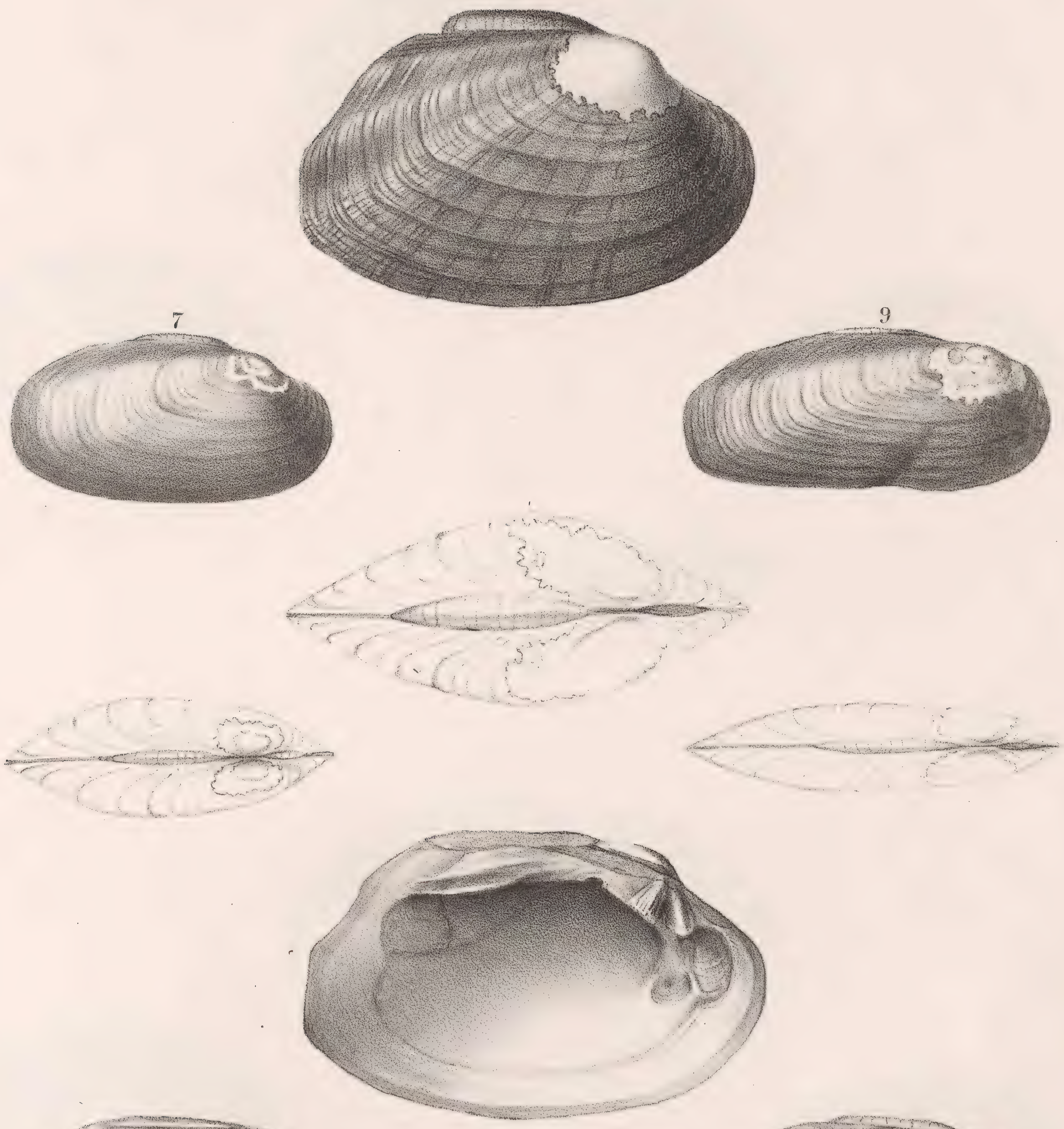
Sinclair's Lith. Phila



4. *Unio Cincinnatiensis.*
5. *Unio Stonensis.*
6. *Unio Lesueurianus.*

J.T. French del.

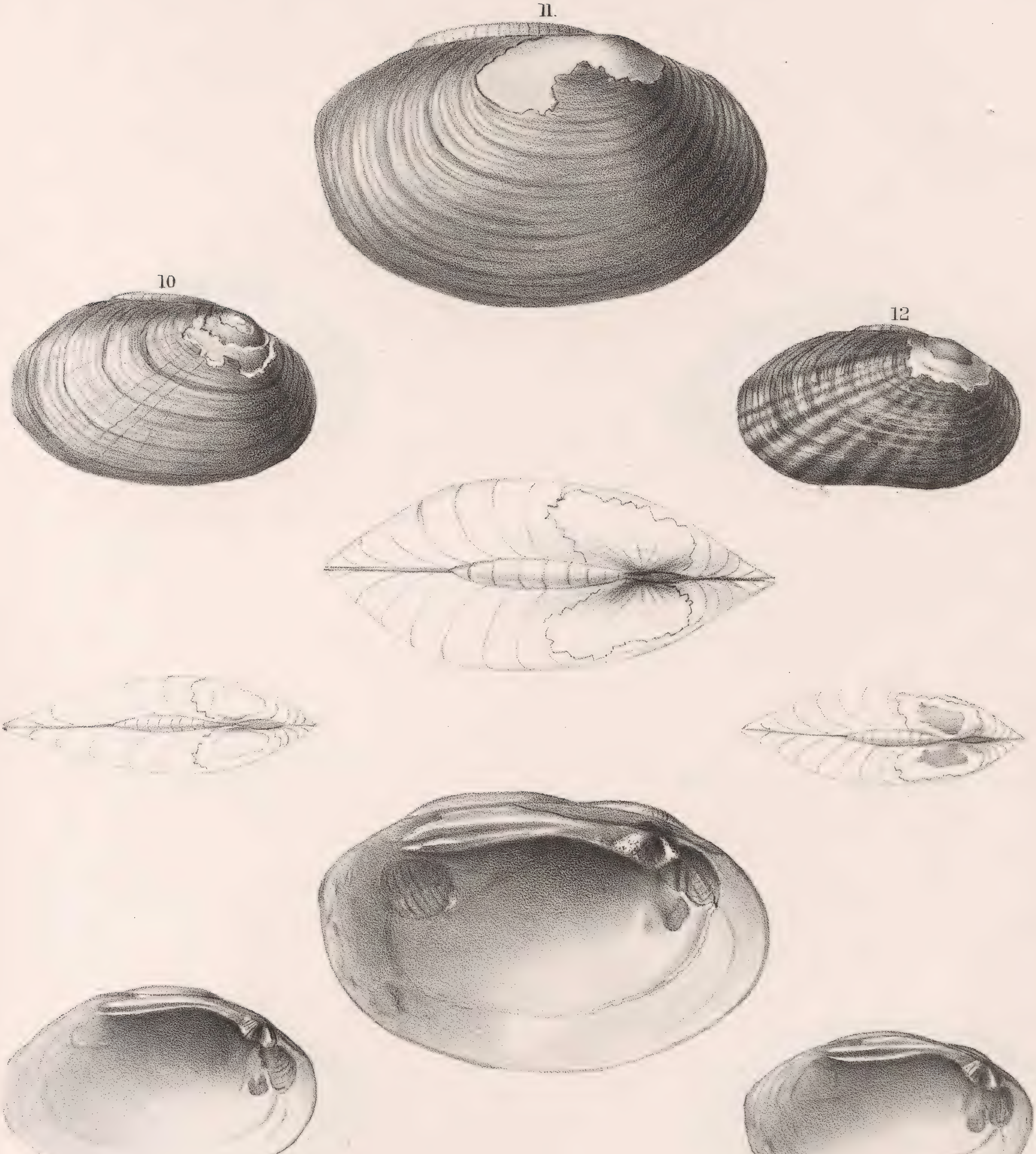
Sinclair's Lith. Phil.a



7. *Unio dactylus.*
8. *Unio biangulatus.*
9. *Unio strigosus.*

J. T. French del.

Sinclair's Lith. Phil.a

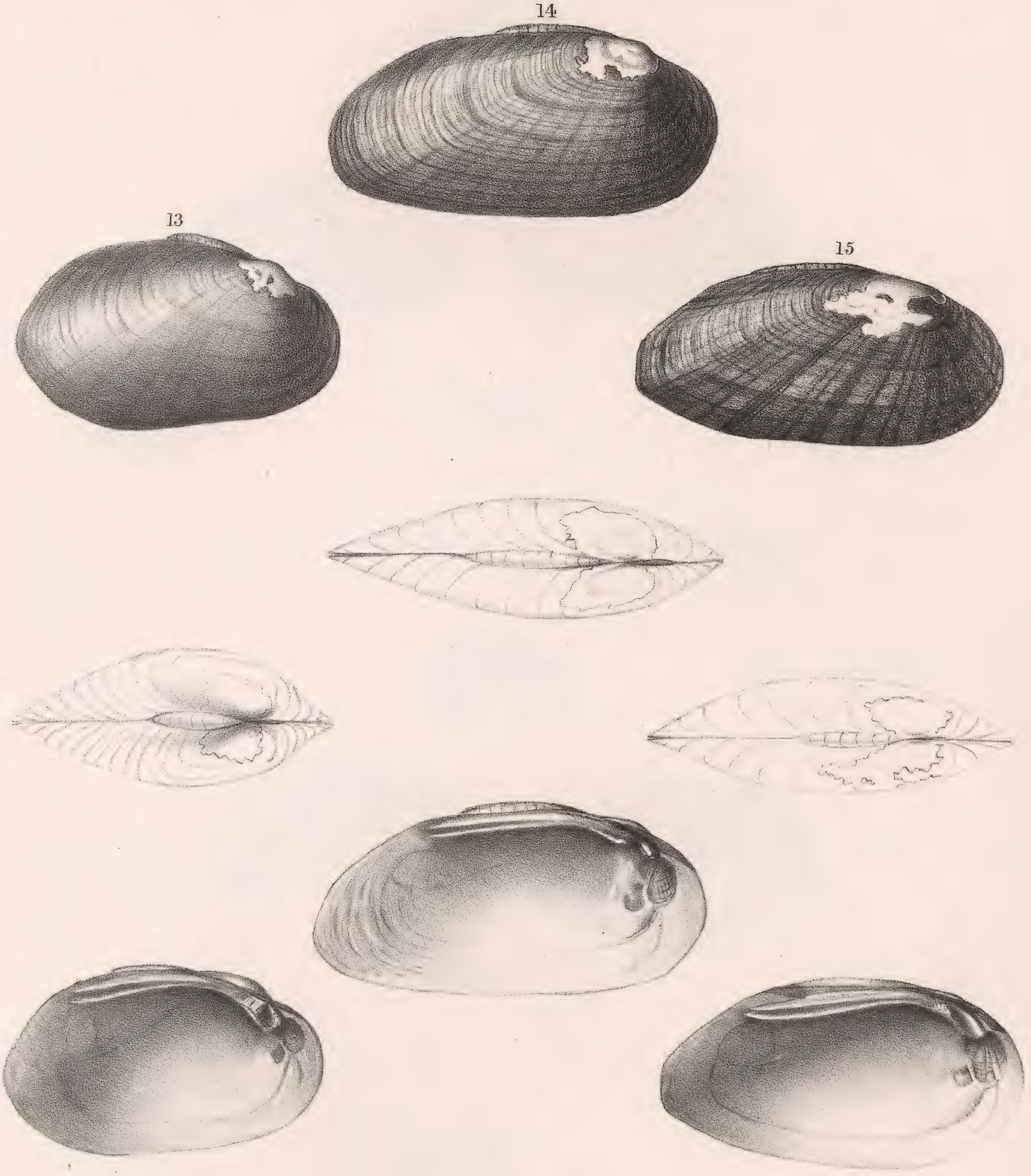


H. C. Lea del.

10. *Unio tener.*
11. *Unio Tennesseensis.*
12. *Unio amœnus.*

Sinclair's Lith. Phil.

on stone by J. T. French.

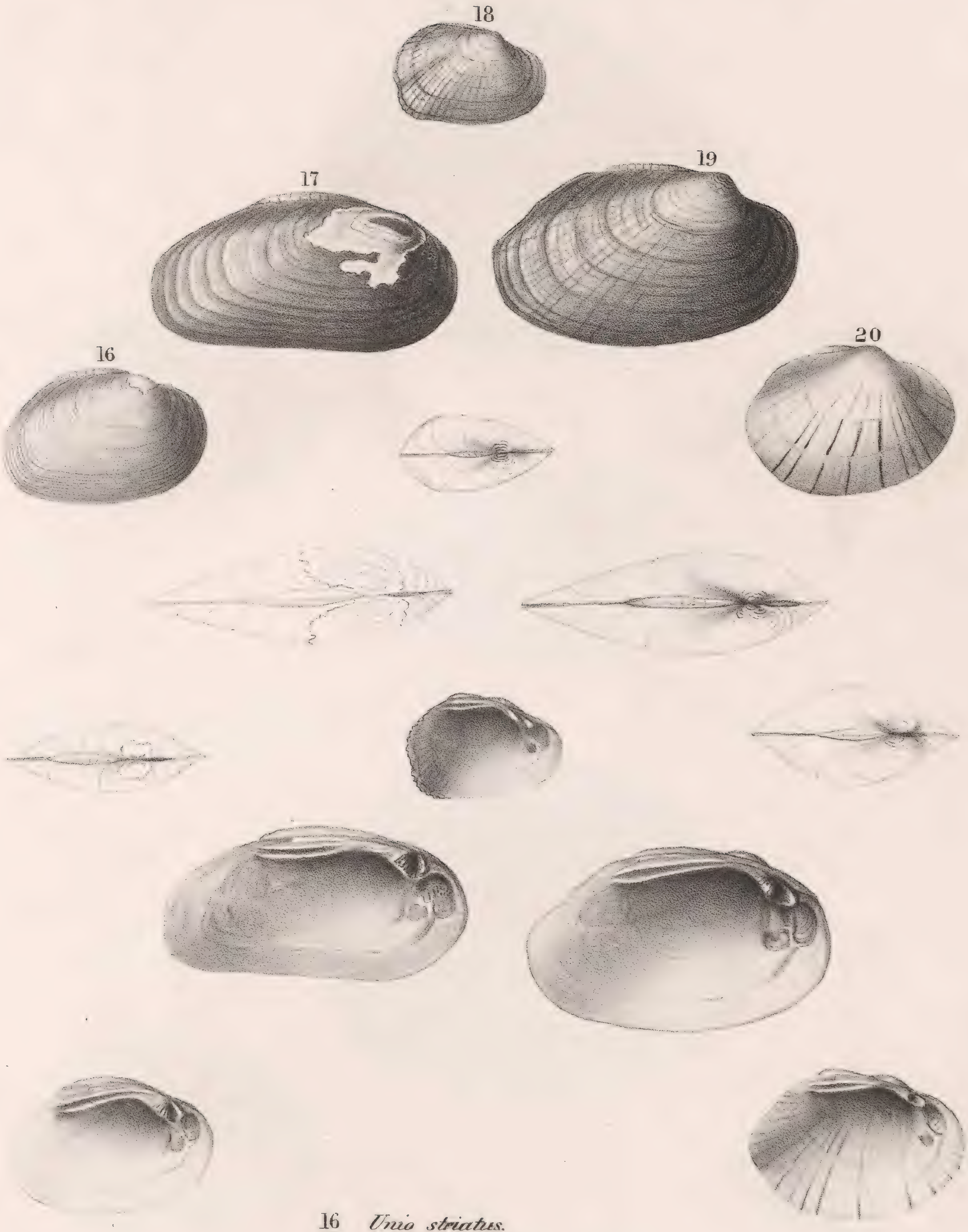


13 *Unio obtusus.*
14 *Unio fatuus.*
15 *Unio Geddingsianus.*

H. C. Lea del.

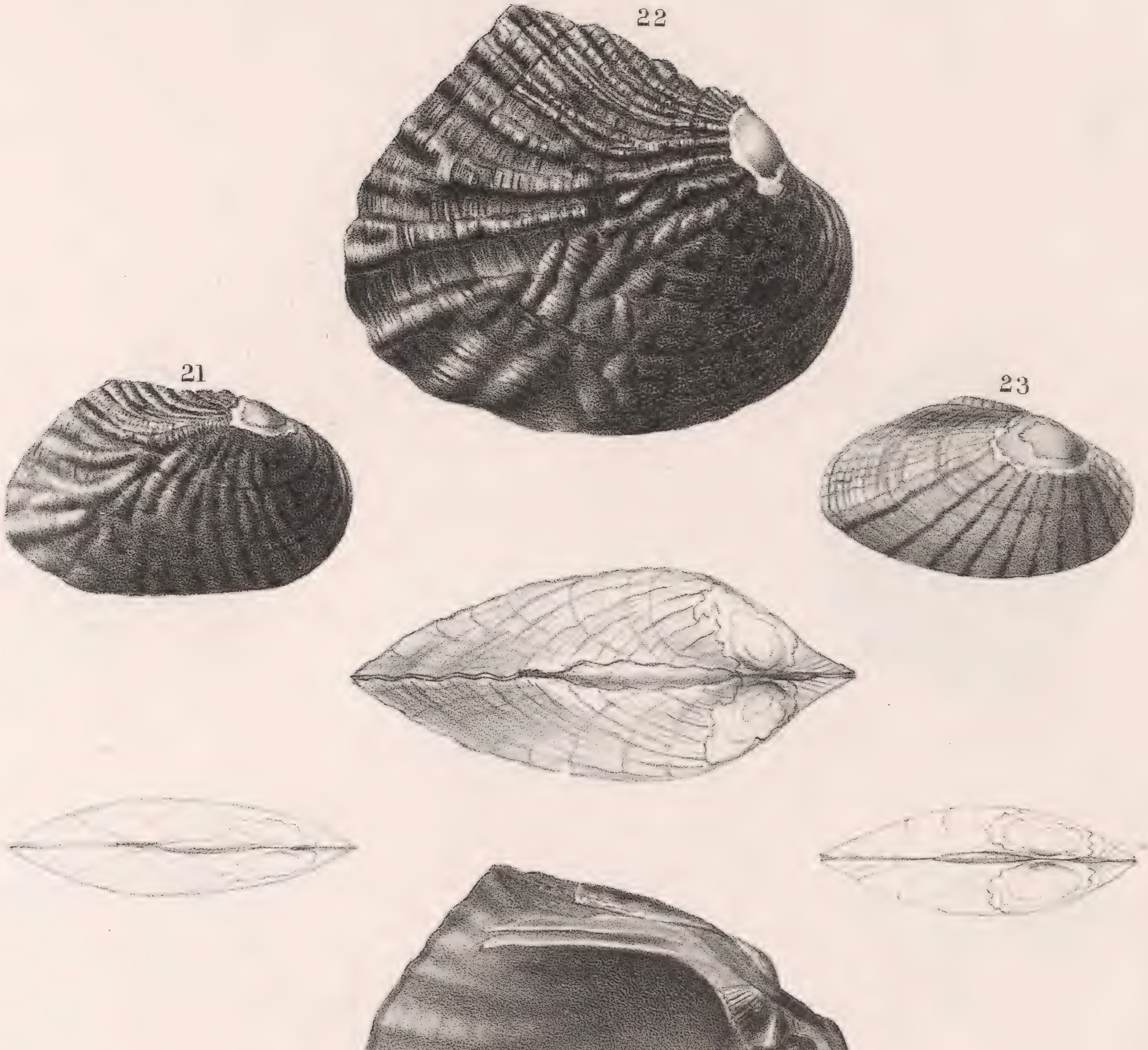
on stone by J. T. French.

Sinclair's Lith. Phil.



16 *Unio striatus.*
17 *Unio tortivus.*
18 *Unio lenior.*
19 *Unio nitens.*
20 *Unio lineatus.*

H. C. Lea del. on stone by J. T. French. Sinclair's Lith Phila.

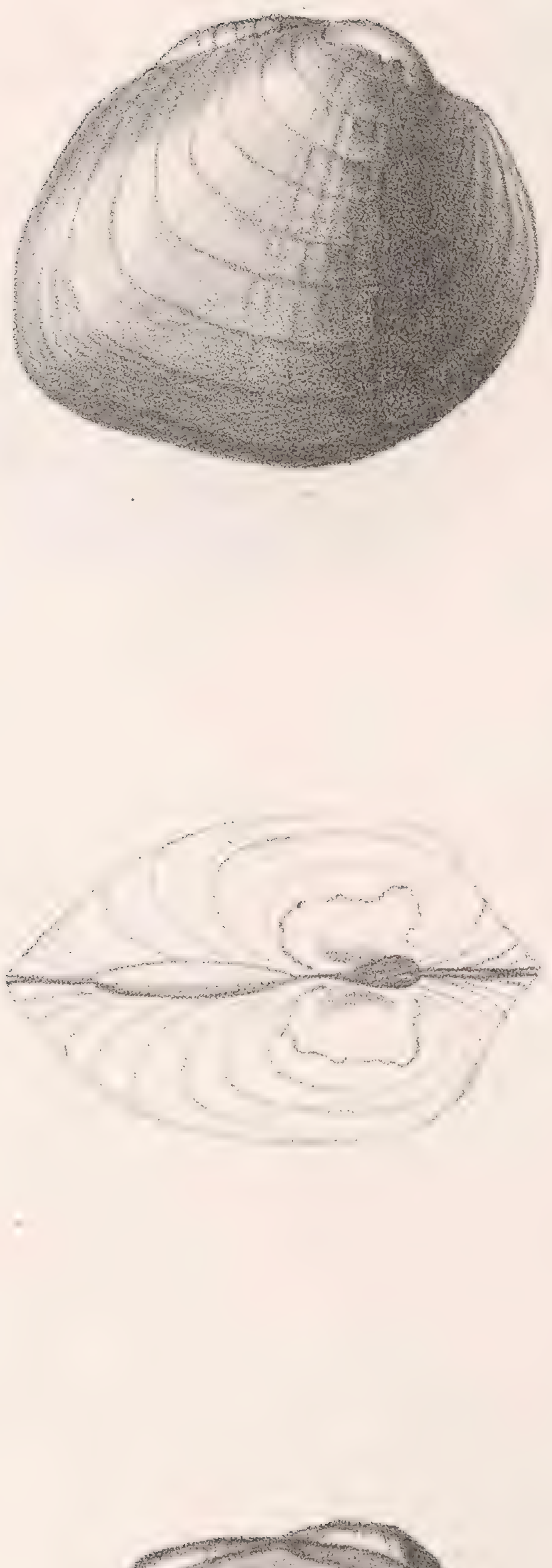


21 *Unio atromarginatus.*
22 *Unio Boykinianus.*
23 *Unio subangulatus.*

J.T. French del.

Sinclair's Lith Phila.

24



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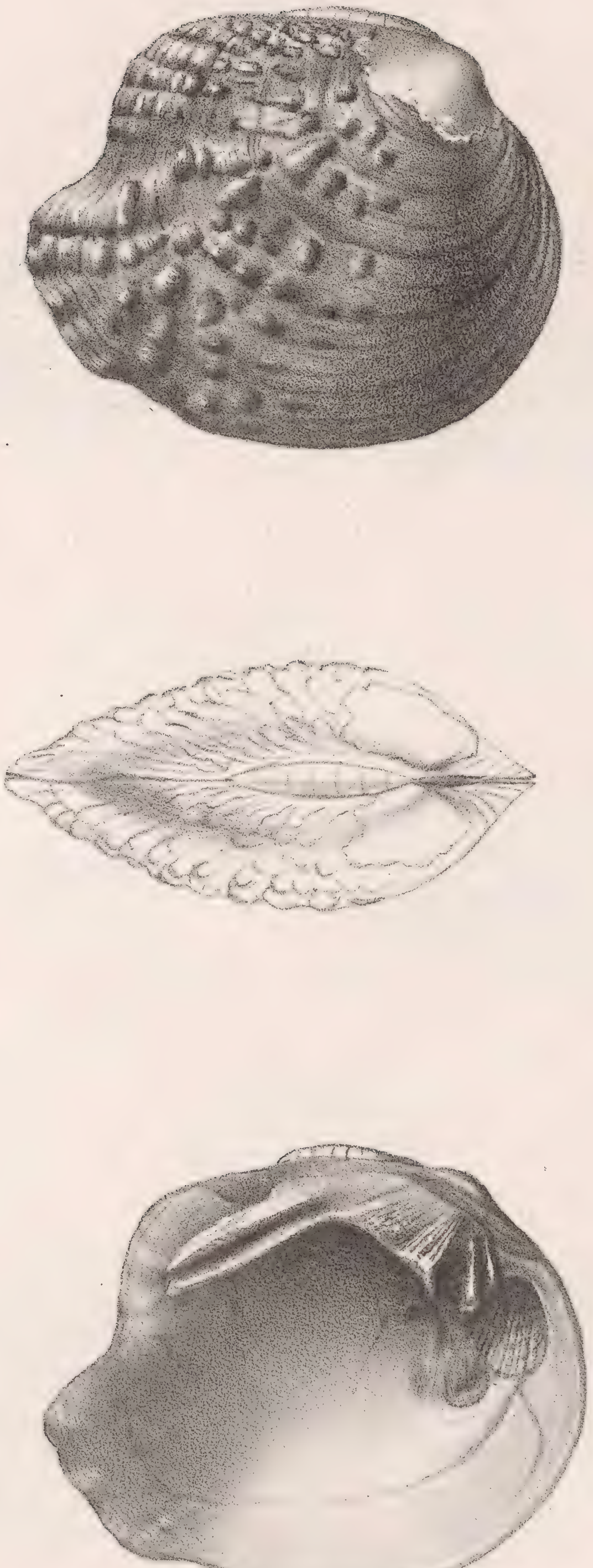

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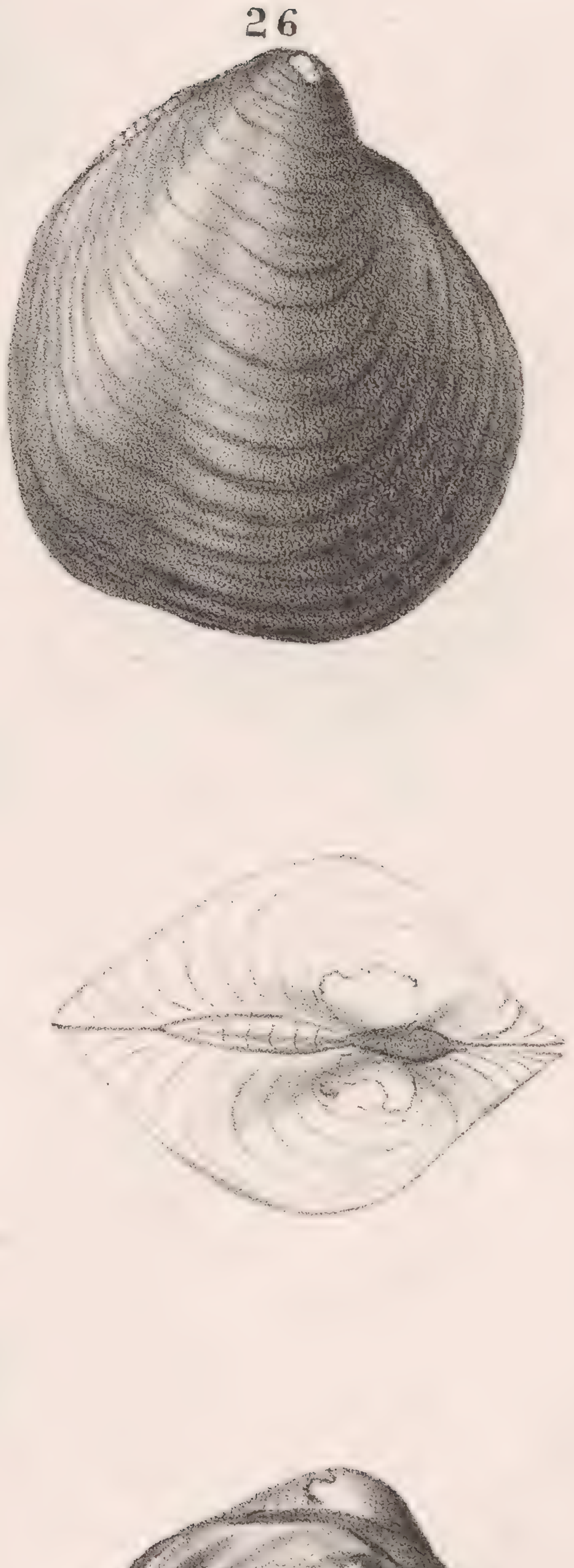
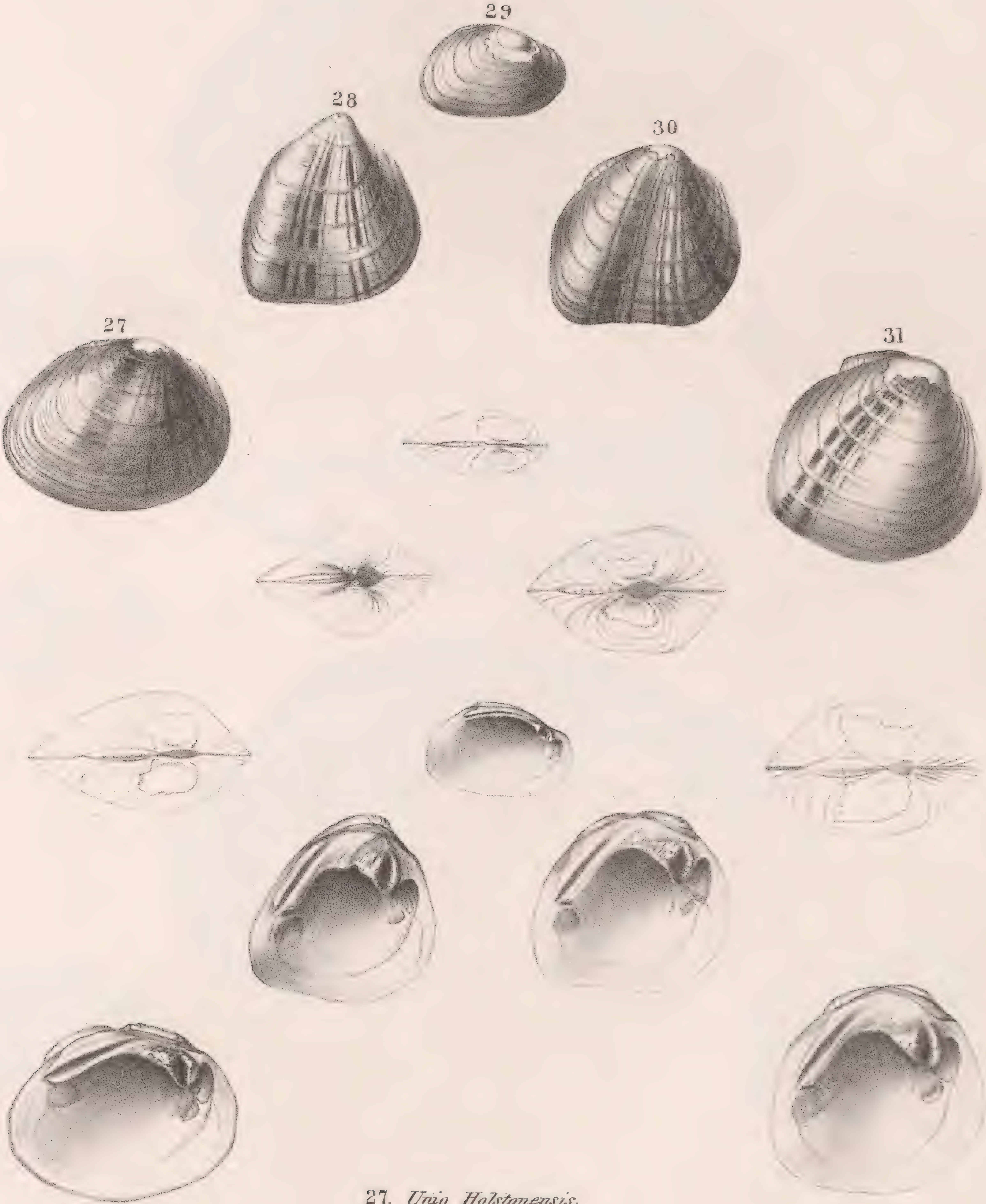


24. *Unio pilaris.*
25. *Unio tuberosus.*
26. *Unio plenus.*

M.C. Lea del.
on stone by J.T. French.
Sinclair's Lith. Phila.



27. *Unio Holstonensis.*
28. *Unio Bournianus.*
29. *Unio paulus.*
30. *Unio Edgarianus.*
31. *Unio dolabelloides.*

H.C.Lea del. on stone by J.T.French. Sinclair's Lith. Phil^a

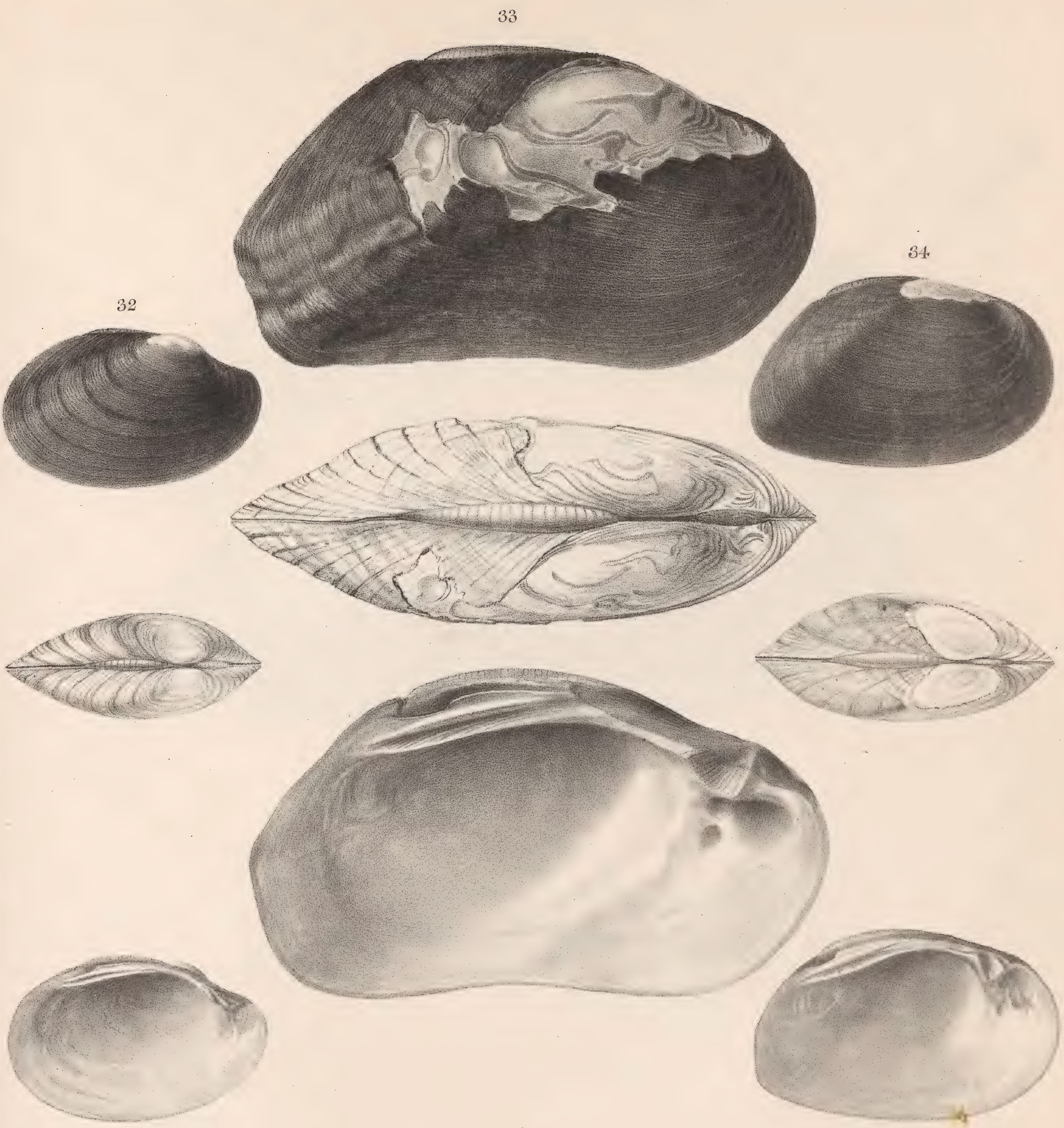
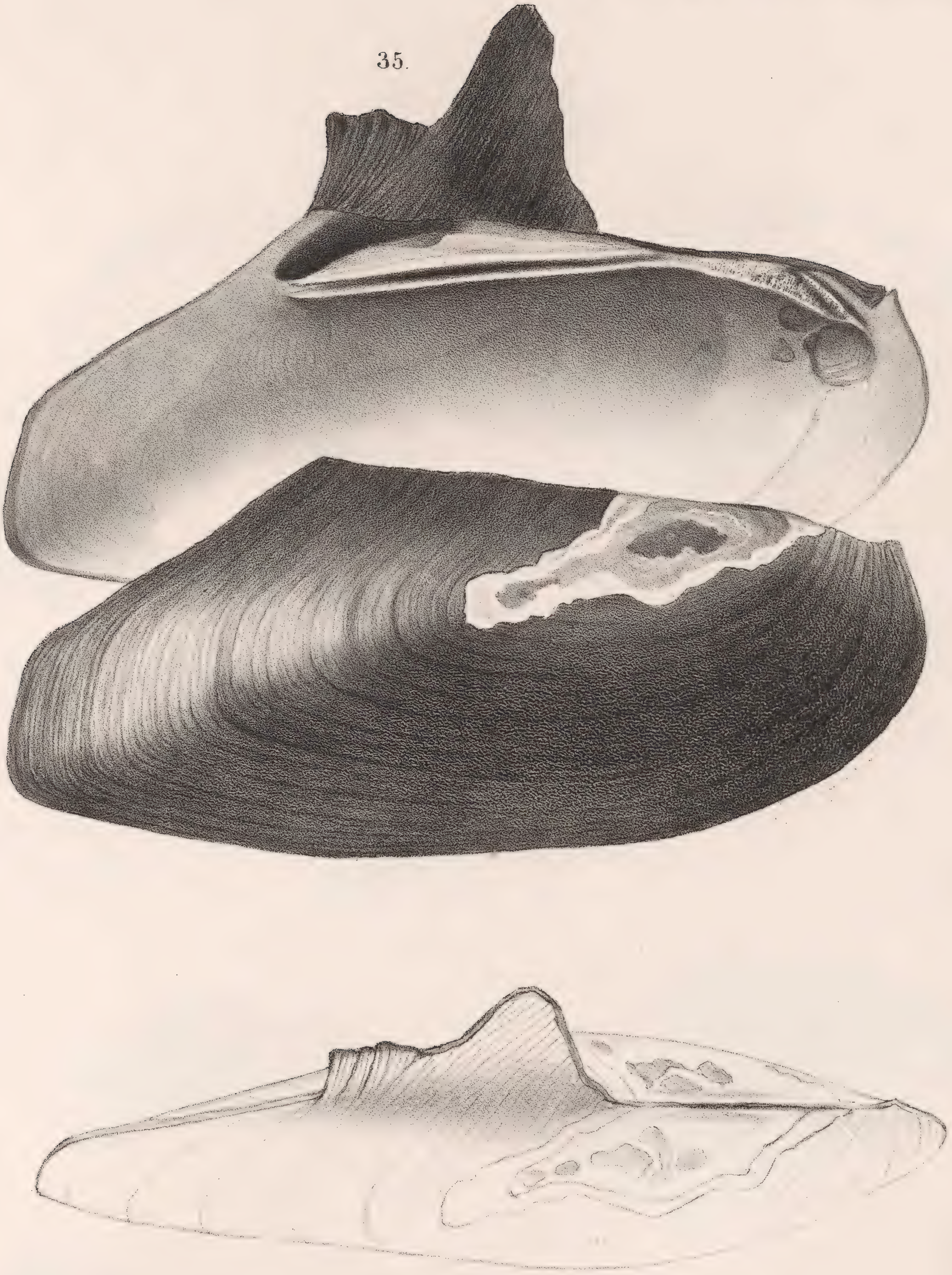


Fig. 32 *Unio Boydianus.*
„ 33 „ *Sloatianus.*
„ 34 „ *incrassatus.*

J. Queen del.

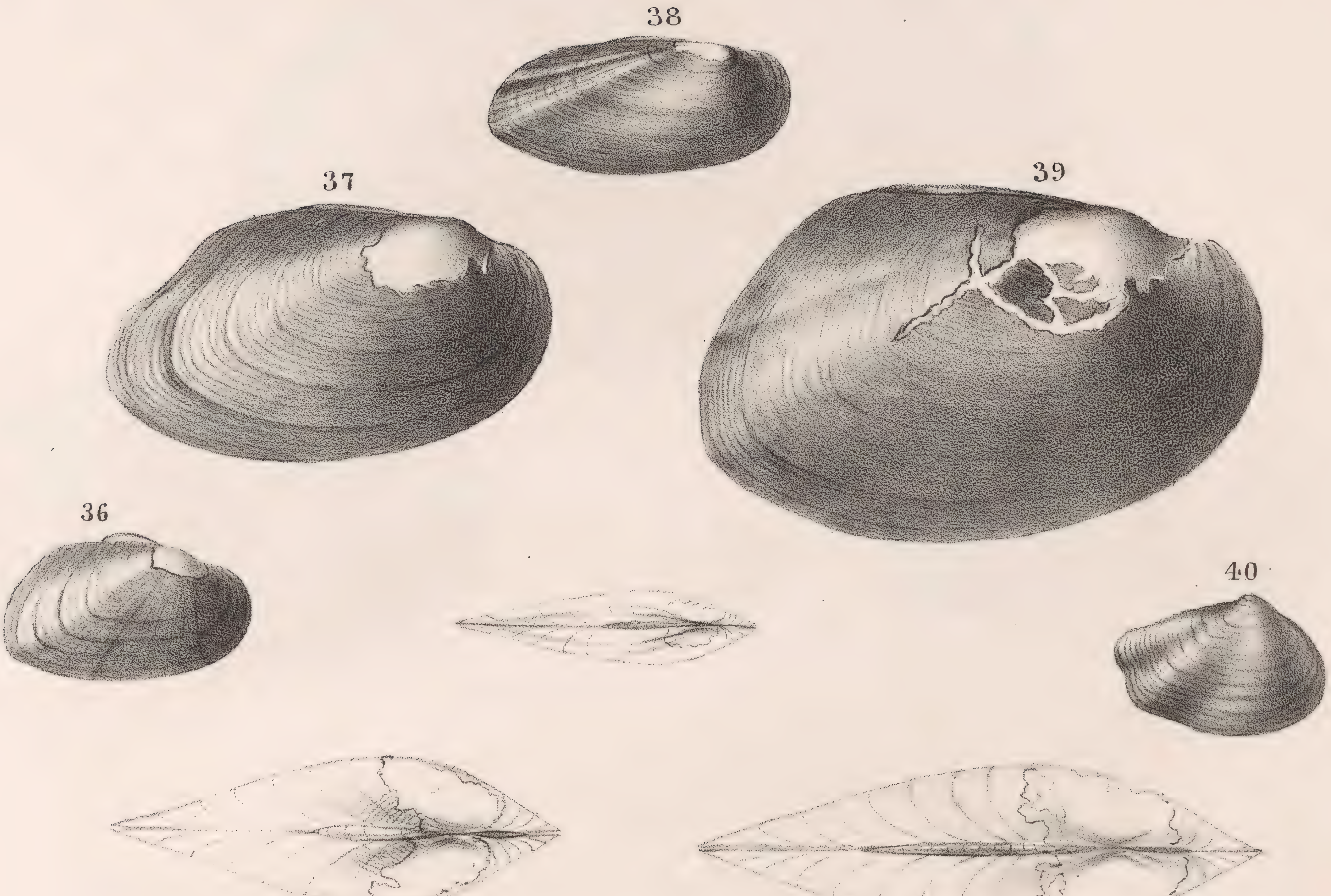
P. S. Duval, Lith. Phil^a

35.



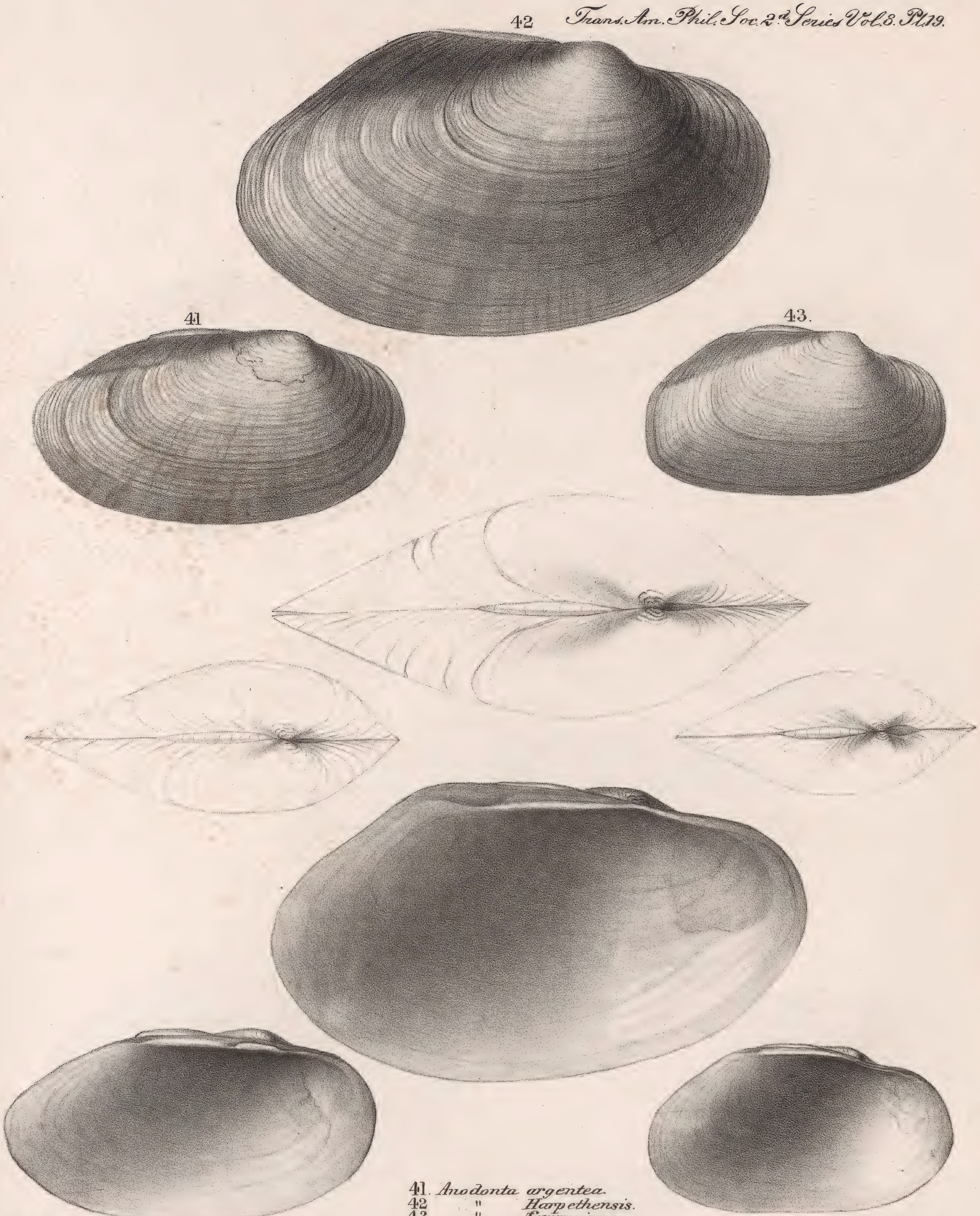
35. *Unio delphinus.*

H.C. Lea del. on stone by J.T. French. Sinclair's Lith. Phila



36. *Unio pusillus.*
37. *Unio Javanus.*
38. *Unio Orientalis.*
39. *Margaritana Vandenbuschiana.*
40. *Margaritana Curreyana.*

H. C. Lea del.
on stone by J. T. French.
Sinclair's Lith. Phila.

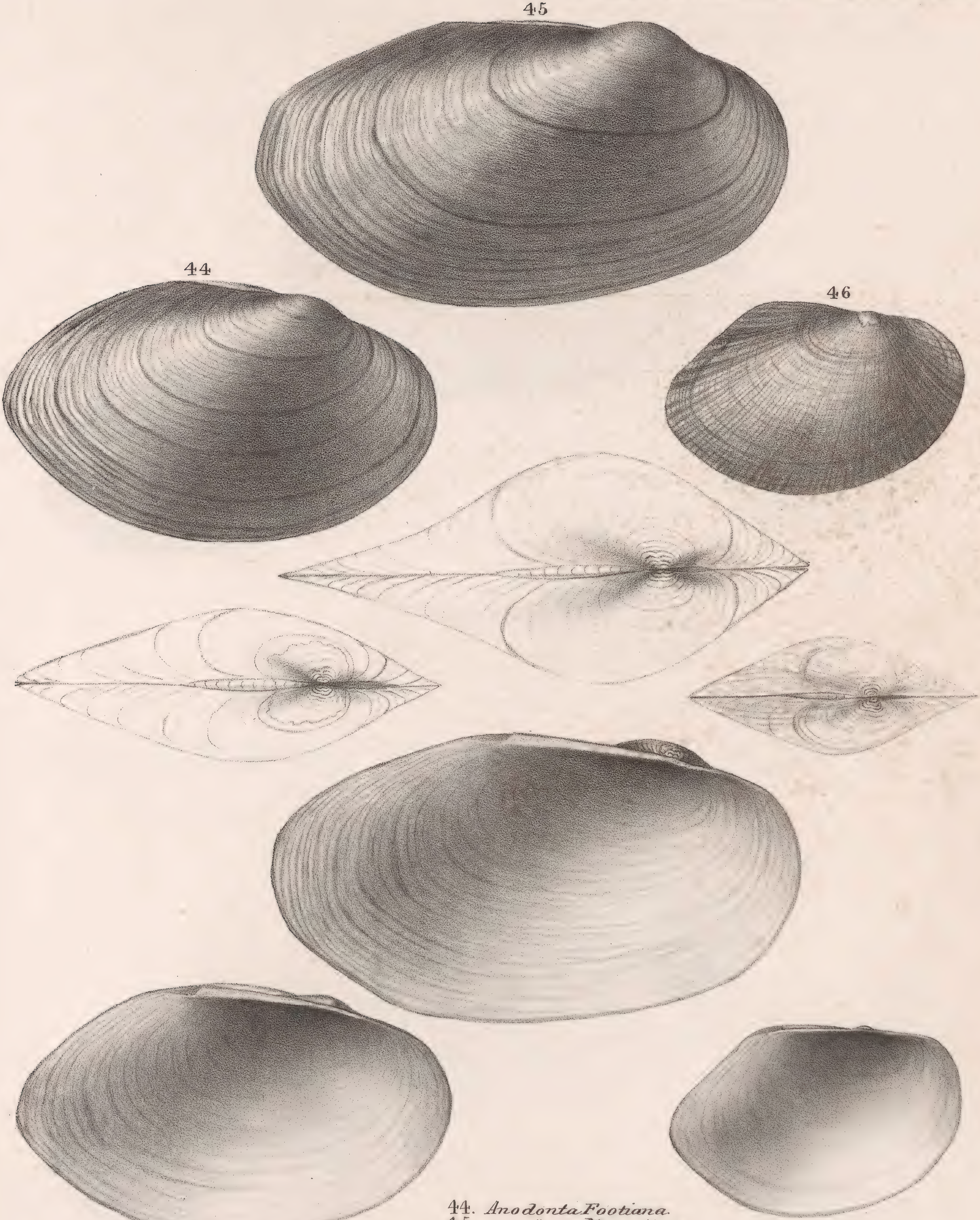


41. *Anodonta argentea.*
42 " *Harpethensis.*
43 " *ferruginea.*

H. C. Lea del.

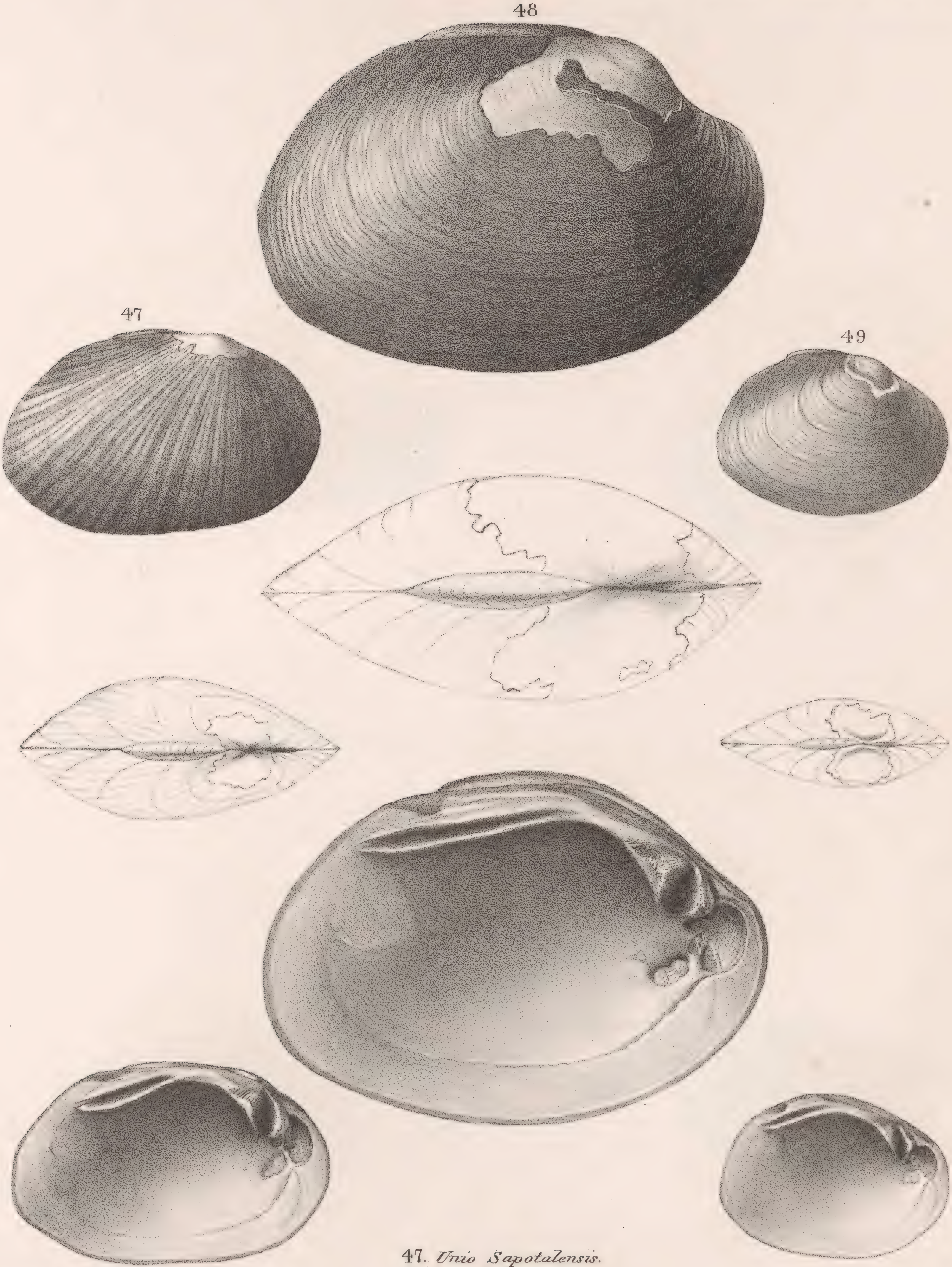
on stone by J. T. French.

Sinclair's Lith. Phil^{a}.



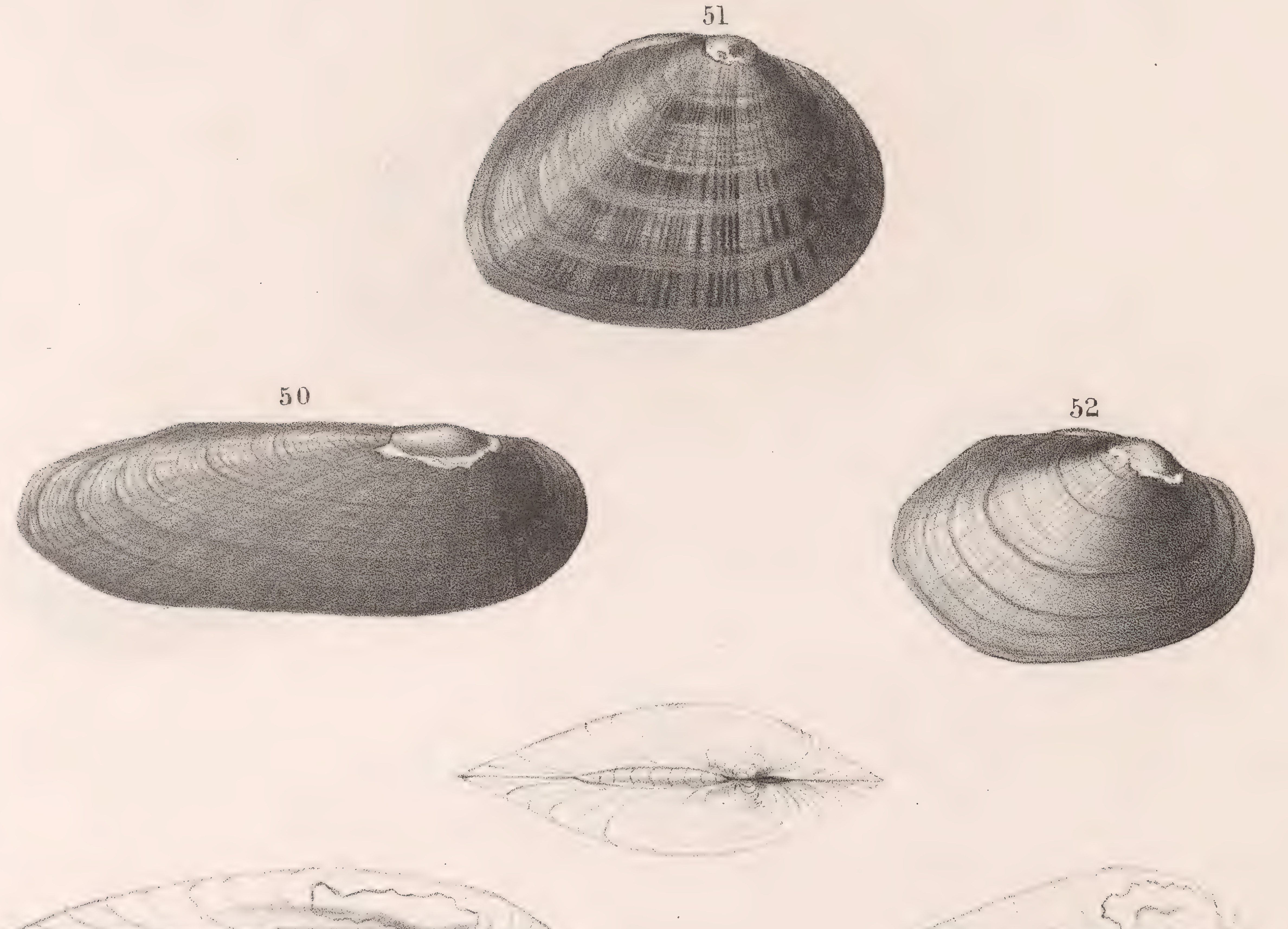
44. *Anodonta Footiana.*
45. " *Maryattana.*
46. " *Couperiana.*

M. C. Lea del.
on stone by J. T. French.
Sinclair's Lith. Phila.



47. *Unio Sapotalensis.*
48 " *Tecomatensis.*
49 " *Georgianus.*

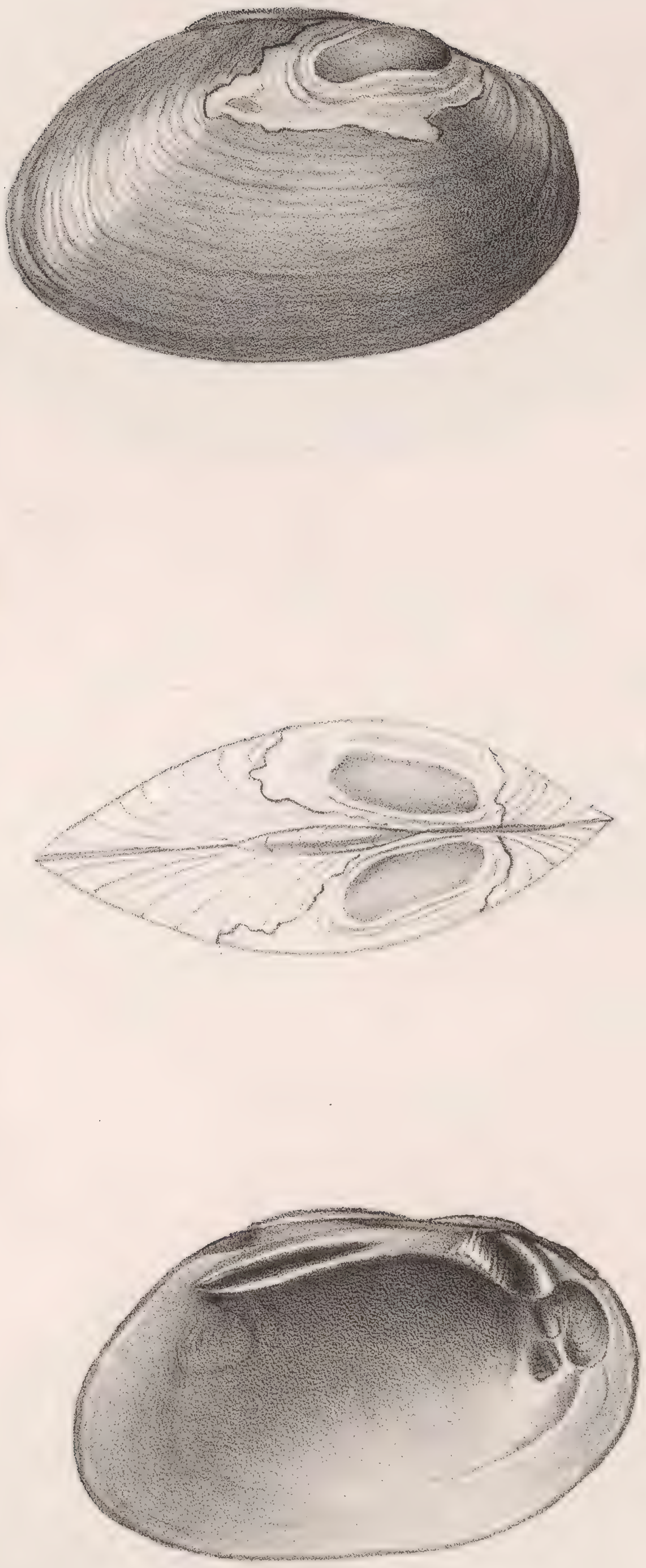
M. C. Lea del.
on stone by J. T. French.
Sinclair's Lith. Phil^{a}.



50. *Unio Duttonianus.*
51. " *Bigbyensis.*
52. " *crocatus.*

H. C. Lea. del.
on stone by J.T. French.
Sinclair's Lith. Phil^a.

54



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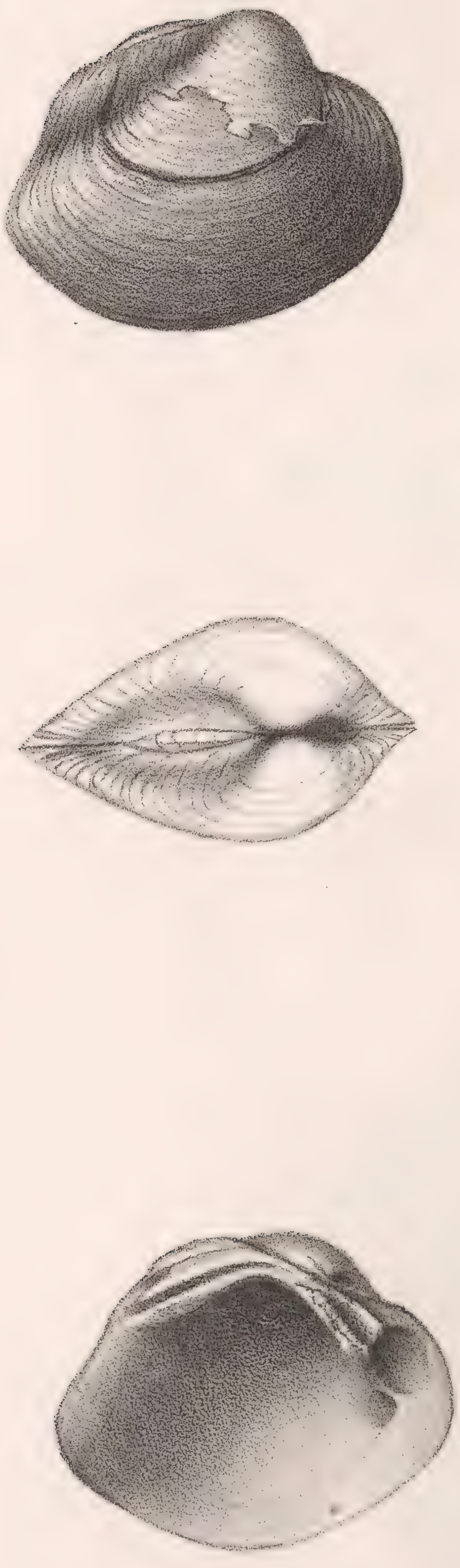

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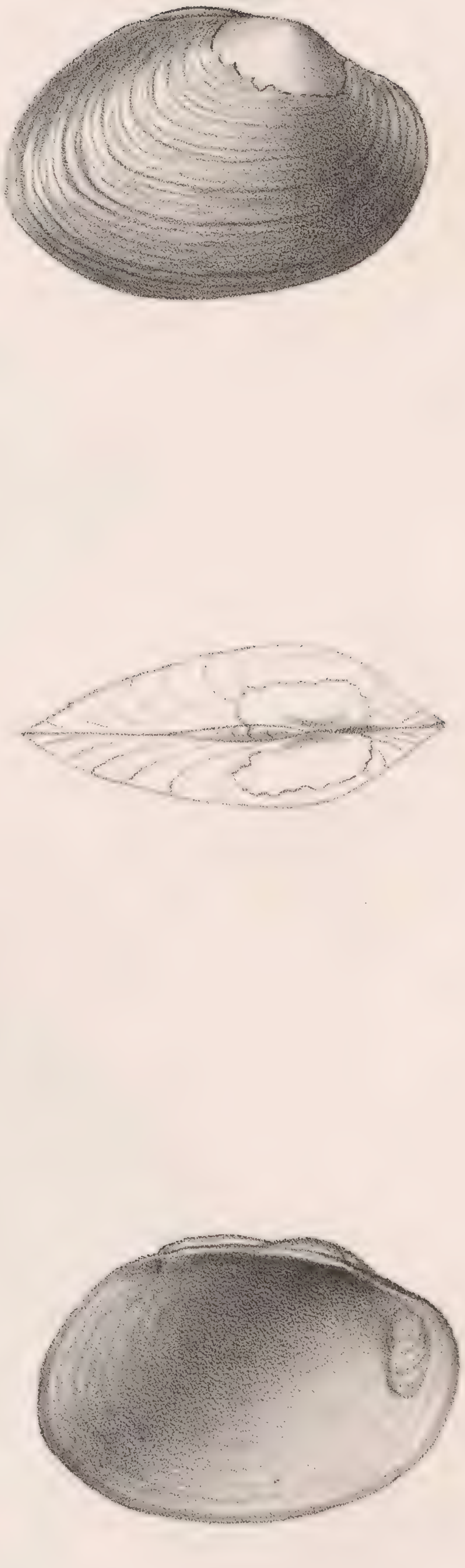
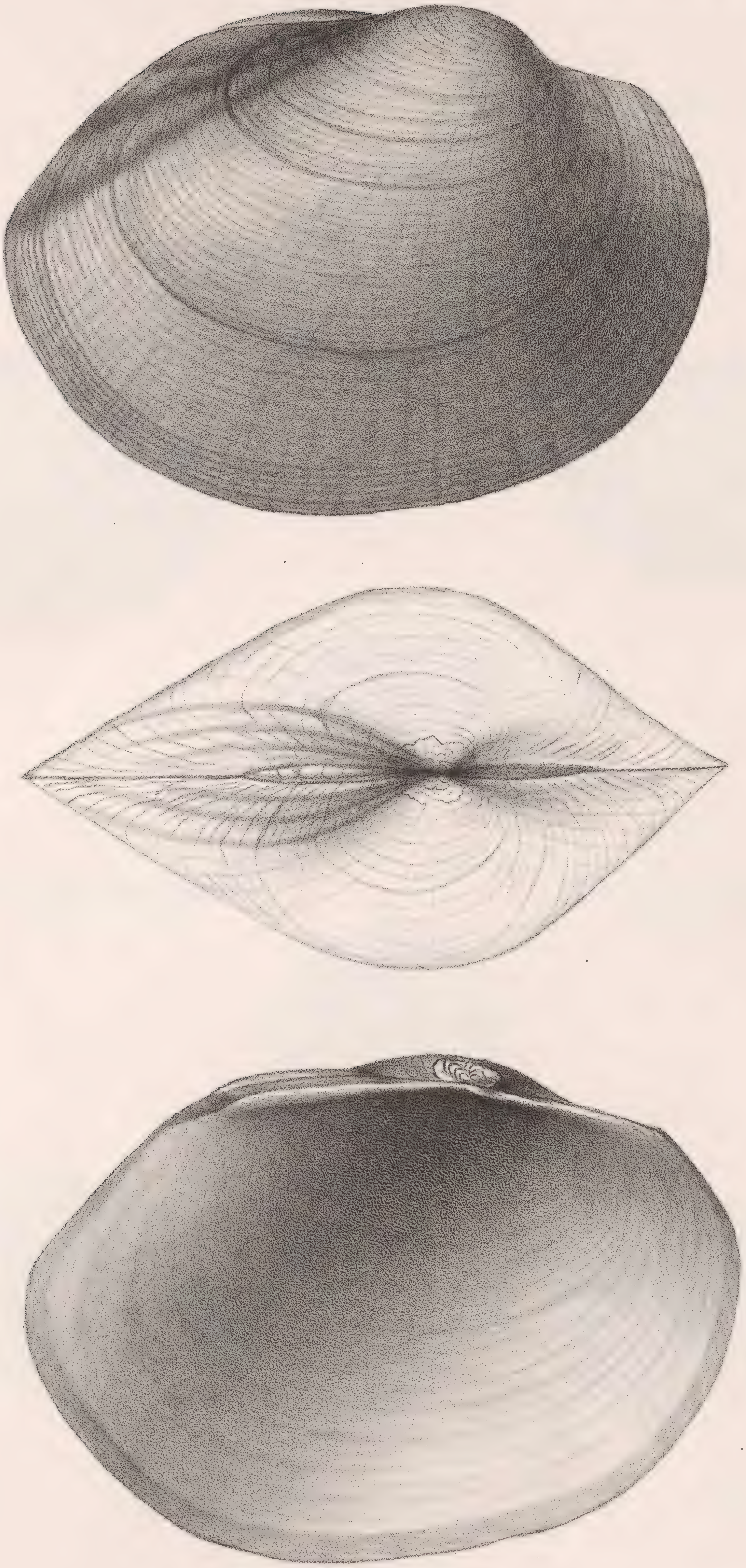


53. *Unio Rajahensis.*
54. *Unio callosus*
55. *Anodonta Montezuma.*

H. C. Lea del.
on stone by J. T. French.
Sinclair's Lith. Phila.

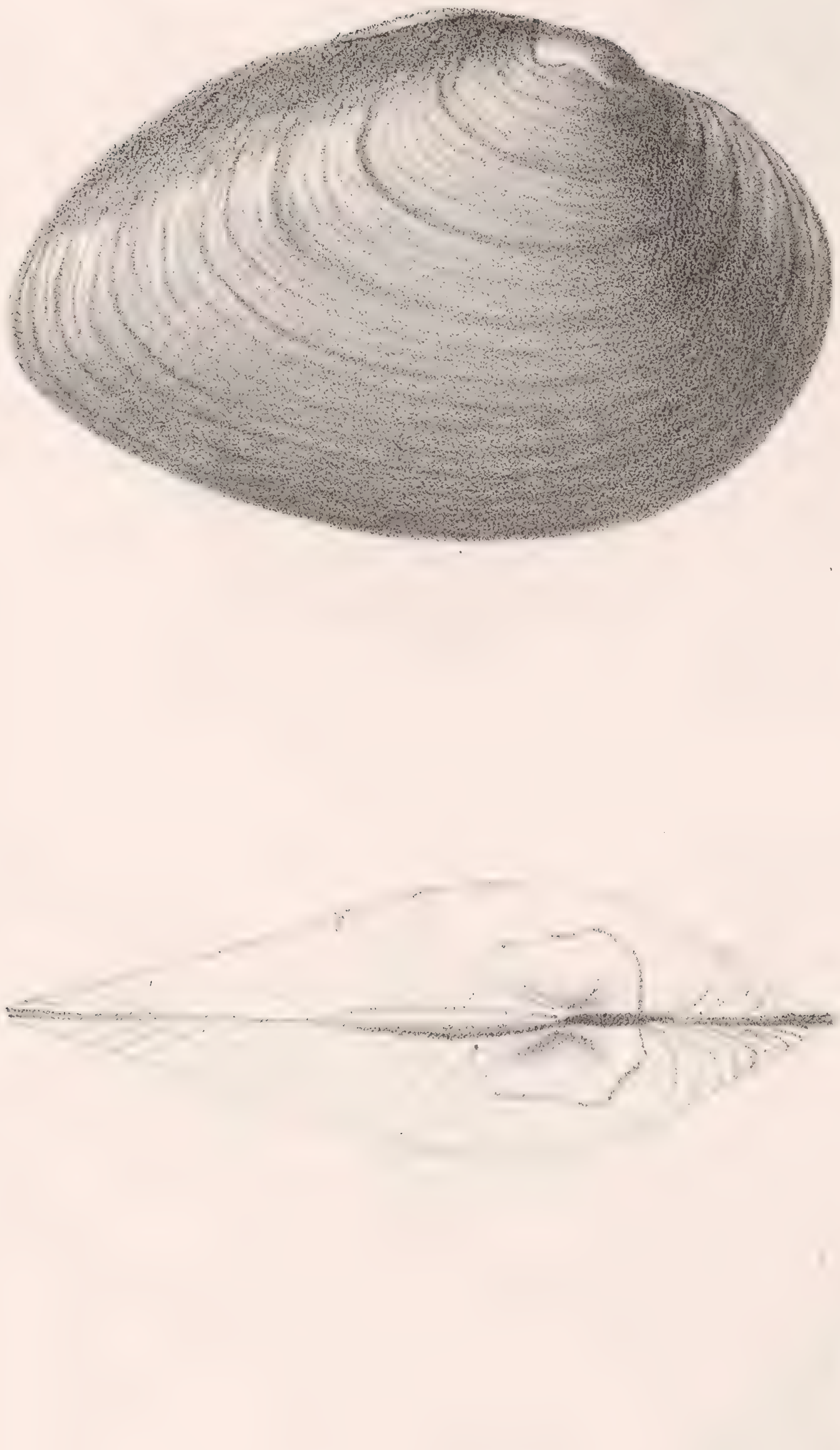
56



56. *Anodonta globosa.*

M.C. Lea del.
on stone by J.T. French.
Sinclair's Lith. Phila

57.



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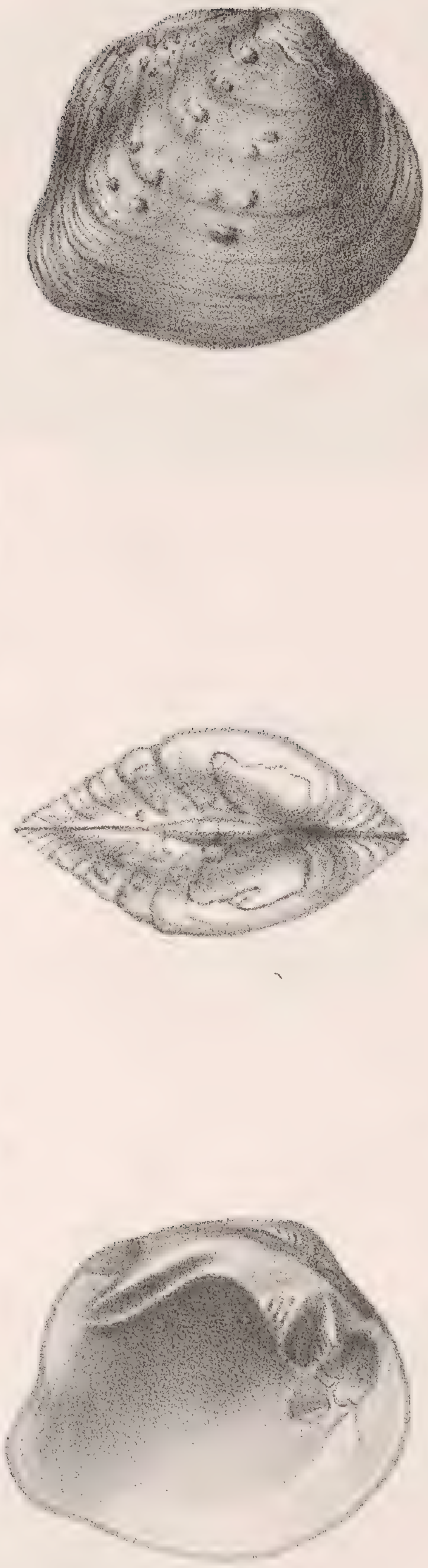

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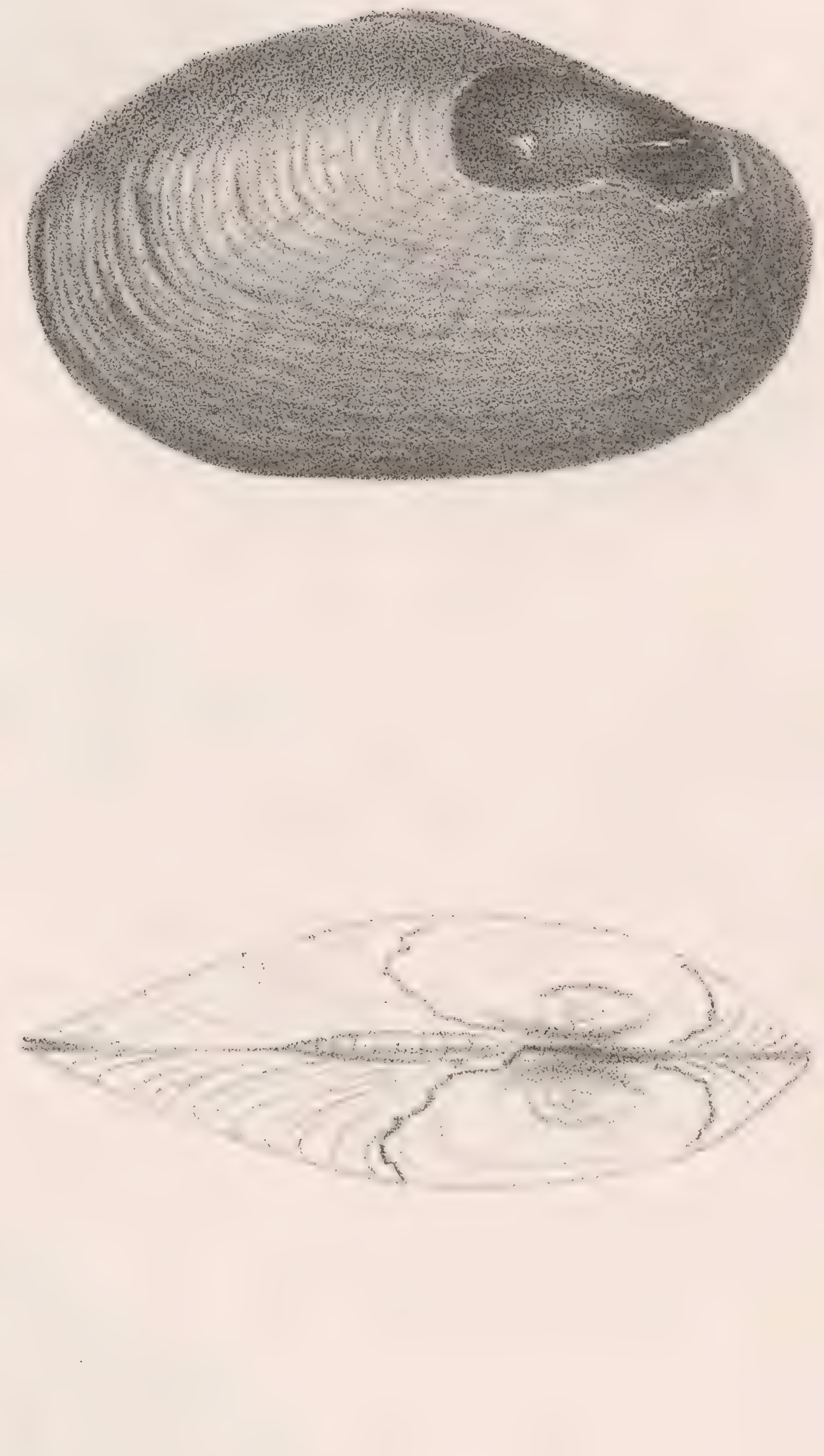


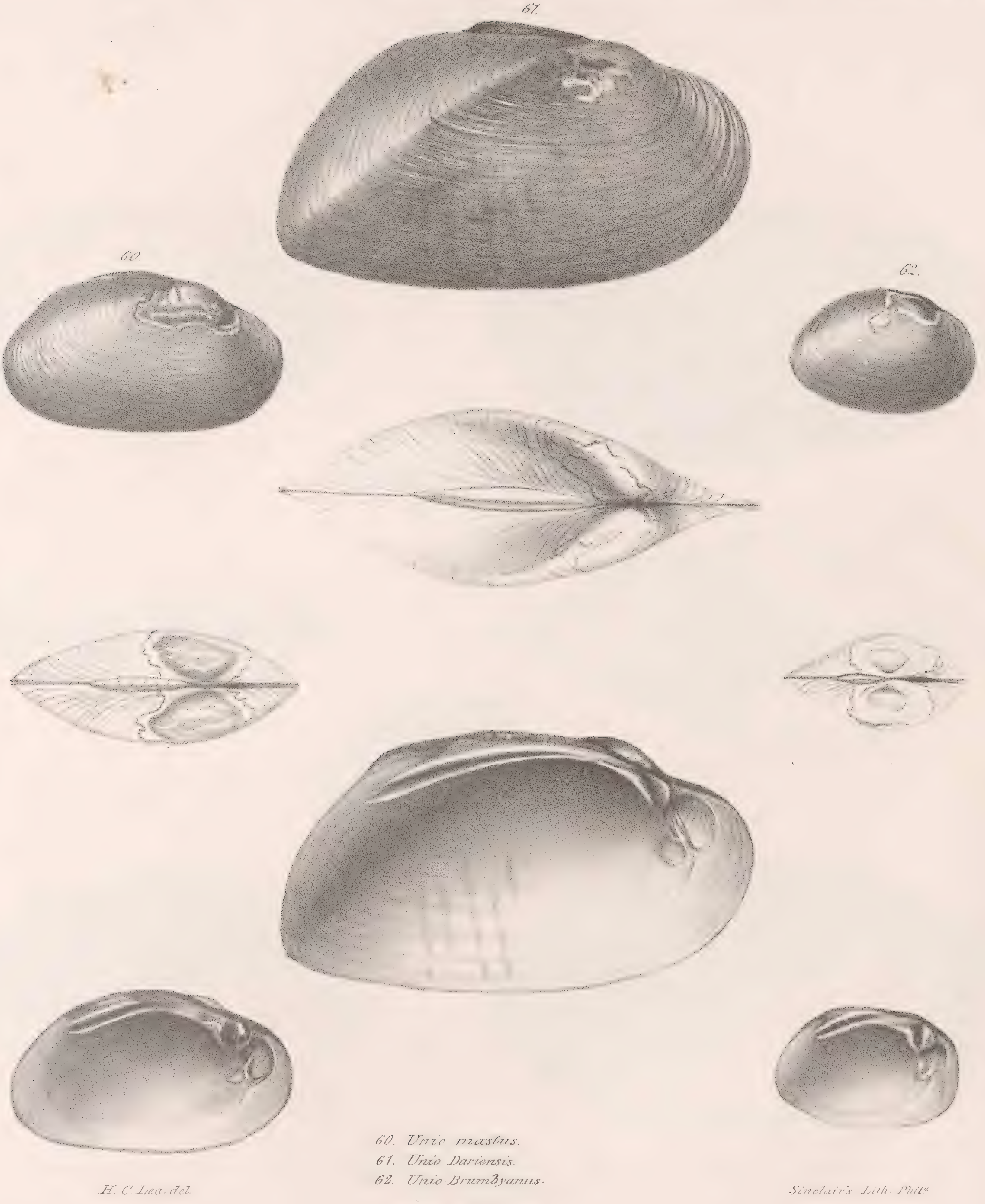
H. C. Lea del.

57. *Unio argenteus.*
58. *Unio sparsus.*
59. *Unio regularis.*

On stone by J. T. French.

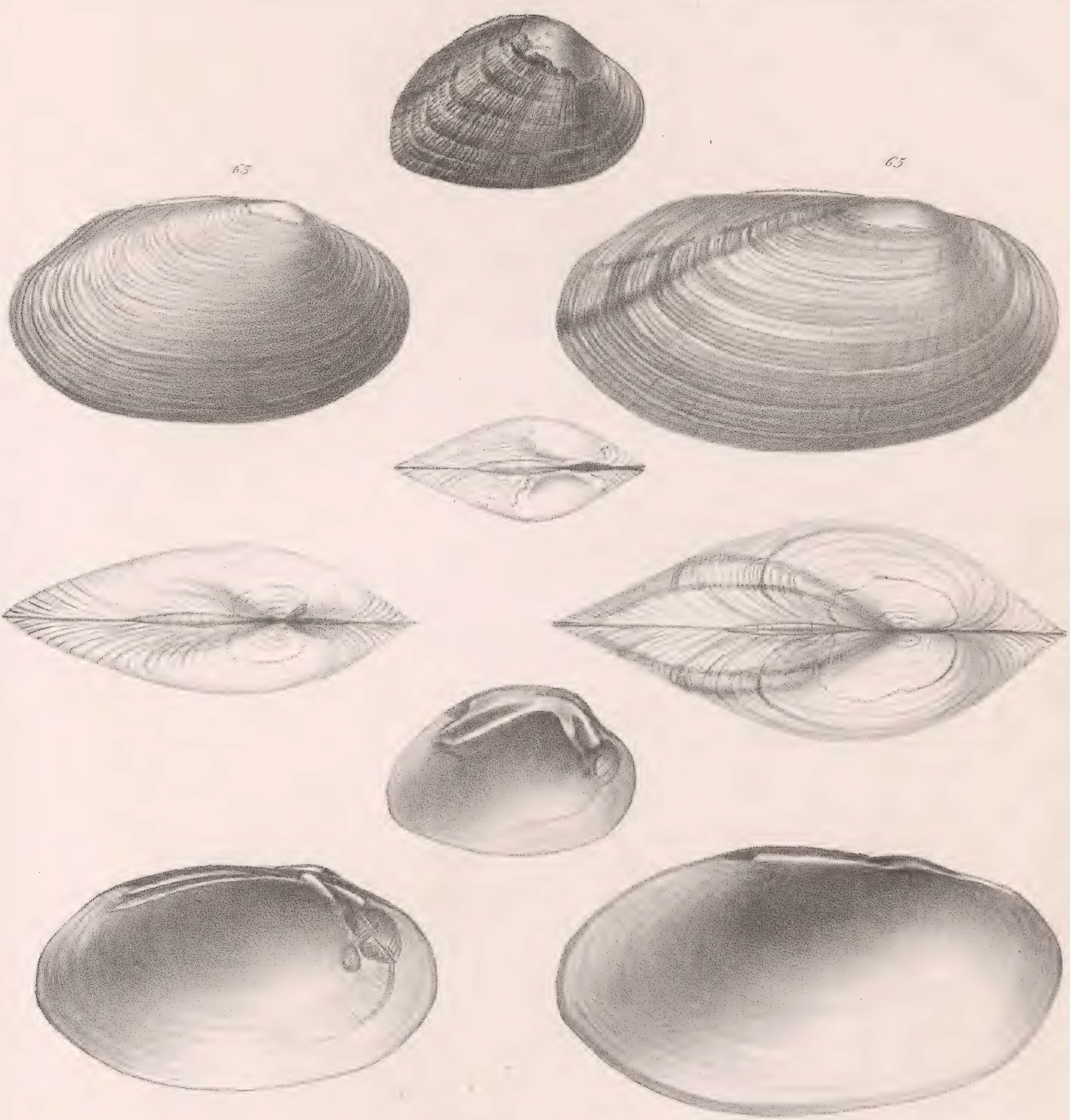
Sinclair's Lith. Phila

Trans. Am. Phil. Soc. 2d Series. Vol. 8 Pl. 26.



60. Unio mastus.
61. Unio Dariensis.
62. Unio Brumbyanus.

H. C. Lea. del.
Sinclair's Lith. Phila
On stone by J. T. French.



H. C. Lea. del.

63. Unio Haleianus.
64. Unio Foremanianus.
65. Anodonta Dunlapiana.
On stone by J. T. French.

Sinclair's Lith. Philad.

OBSERVATIONS

ON THE

GENUS UNIO,

&c.

OBSERVATIONS

ON THE

GENUS UNIO,

TOGETHER WITH

DESCRIPTIONS OF NEW SPECIES IN THE FAMILIES NAÏADES,
COLIMACEA, LYMNÆANA, MELANIANA
AND PERISTOMIANA.

READ BEFORE THE AMERICAN PHILOSOPHICAL SOCIETY, AND ORIGINALLY
PUBLISHED IN ITS TRANSACTIONS.

WITH NUMEROUS PLATES.

BY ISAAC LEA,

MEMBER OF THE AM. PHIL. SOC.; OF THE ZOOLOGICAL SOC.
OF LONDON; OF THE IMPERIAL SOC. OF NAT.
HIST. OF MOSCOW; ETC. ETC.

VOL. IV.

PHILADELPHIA:
PRINTED FOR THE AUTHOR.

TO ISAAC HAYS, M. D.

My Dear Friend:

To you, who have been with me a co-labourer in the field of science for more than thirty years, I have often applied for the advantage of your judgment and experience. Permit me now to recall to your mind our old and friendly relations, and present to you this volume, which, although it will not add an idea to your extensive medical acquirements, may serve to remind you of a constant and sincere friend.

Most faithfully
Yours,
ISAAC LEA.

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TRANSACTIONS

OF

THE AMERICAN PHILOSOPHICAL SOCIETY.

ARTICLE I.

Continuation of Mr. Lea's Paper on Fresh Water and Land Shells. Read February 19, 1841.

HELIX & CAROCOLLA. (LAMARCK.)

THE genus *Helix* is widely scattered over the soil of the United States, and the same species have in many instances a very wide geographical range. Climatal influence is very evident in many species.—In some localities they are more inflated and larger; in others more depressed, even becoming *carinate* like the genus *Carocolla.* The uncertainty of this *carinate* character has induced me to hesitate in the admittance of the genus *Carocolla,* but the number of *Helices* is so great that a strong inducement is presented to preserve it for the present.

The *Helices* of the United States are nearly all of a dull horn colour, and in this respect not very attractive. Most of the species are, however, furnished with apertures differing much from each other, and presenting the most interesting characters as regards teeth, &c. Mr. Say has described thirty-nine species, and seventeen have been proposed by myself and other naturalists. To that number I propose now to add a single species, as well as one to the genus *Carocolla.*

HELIX TENNESSEENSIS.*

Testâ suprà plano-convexâ, subtus convexâ, luteâ, obliquè striatâ, umbilicatâ; spirâ brevi; suturis subimpressis; anfractibus quinis, subconvexis; aperturâ lunatâ; labro intus incrassato.

Shell above plano-convex, beneath convex, yellow, obliquely striated, umbilicated; spire short; sutures somewhat impressed; whorls five, somewhat convex; aperture lunate; lip thickened within.

Hab. Cumberland Mountains, Tennessee. S. M. Edgar. My Cabinet, and Cabinet of Mr. Edgar. Diam. .45, Length .32 of an inch.

Remarks.—A species very nearly allied to *H. limbata,* Drap. It differs in having a wider umbilicus, a less expanded aperture, and having an indistinct brownish line on the periphery, the *limbata* having a white and very distinct one. The striæ cover the whole surface of the shell, but are more distinct on the superior part. The thickening of the line within the edge of the lip gives a white band on the outside.

---

* It is regretted that the figures to illustrate the species of Mr. Lea's paper cannot now appear. It is hoped that they may be hereafter furnished.

Carocolla Edgariana.

Testâ suprà subplanâ, subtus convexâ, rufo-fuscâ, enormiter striatâ, imperforatâ; spirâ brevi; suturis vix impressis; anfractibus quinis, planulatis; aperturâ angustissimâ; columellâ dentem unicum longum et laminatum habente; labro incrassato, in medio incisso.

Shell nearly flat above, beneath convex, reddish brown, irregularly striate, imperforate; spire short; sutures scarcely impressed; whorls five, flattened; aperture very narrow; columella furnished with a long lamellar tooth; lip thickened, in the middle notched.

Hab. Cumberland Mountains, Tennessee. S. M. Edgar. My Cabinet and Cabinets of Mr. Edgar and Dr. Troost. Diam. .40, Length .20 of an inch.

Remarks.—Among a number of *Helices* taken by Mr. Edgar were three specimens of this species, which do not seem to have been before observed. The carina is sharp. The form of the aperture that of *H. hirsuta,* (Say,) except that the superior and thick part of the lip joins the tooth of the columella. On the surface of the shell there is no hirsute character. Several specimens of the *hirsuta* accompanied them, all of which presented their usual subglobose character. It differs from *C. spinosa,* (nobis,) in being smaller, less flattened, and being without the cilia.

Bulimus Jayanus.

Testâ ovato-conicâ, crassâ, suprà albidâ, subtus castaneâ, perforatâ; anfractibus senis, subconvexis; aperturâ ellipticâ; labro reflexo, albo, margine lineato; columellâ albâ, lævi.

Shell ovately conical, thick, whitish above, chestnut colour below, perforate; whorls six, somewhat convex; aperture elliptical; lip reflected, white, margin lineate; columella white, smooth.

Hab. Java? My Cabinet and Cabinet of Dr. Jay. Diam. .1, Length, 1 .9 of an inch.

Remarks.—This species was purchased of a dealer who informed me that it came from Java. It is remarkable for the distinct division of the colour on the middle of the lower whorl, the superior part being whitish with distinct longitudinal brown striæ and spots below the sutures, which are very small. The perforation is very small, and around it the colour is lighter. The chestnut colour of the lower part is visible in the interior, and on the white lip forms a rather sharp angle. The brown line on the margin of the lip is very distinct. The apex is black, the aperture is nearly one-half the length of the shell.

Achatina turbinata.

Testâ turbinatâ, fuscâ, suprà obliquo-fasciatâ et maculatâ, striis minutis decussantibus; suturis impressis; anfractibus octonis, convexis, infrà suturas impressis; aperturâ parvâ, ovatâ; columellâ incurvâ.

Shell turbinate, brownish, above obliquely banded and spotted, with minute decussate striæ; sutures impressed; whorls eight, convex, impressed below the sutures; aperture small, ovate; columella incurved.

Hab. Liberia. Dr. Blanding. My Cabinet and Cabinet of Dr. Blanding. Diam. 1 .4, Length 2 .7 inches.

Remarks.—Among many shells procured from Liberia by Dr. Blanding were a few specimens of this *Achatina* which I believe has not been described. It has some resemblance to *A. flammata,* Cailliaud, but is a larger species. Those sent to me by that traveller, from Sennar, being very much exserted. The *flammata* from the south of Africa is shorter than that from Nubia, but it is not so turbinate as this species, nor do they agree in the form of their apertures nor in the markings. On the lower whorl the *turbinata* is brown. The superior whorls are obliquely marked with brown bands, which are broken up into spots on the penultimate whorl, and become darker. In the form of the mouth it approaches very closely to the genus *Bulimus*.

ACHATINA STRIATA.

Testâ subcylindraceâ, corneâ, tenui, longitudinaliter elegantissimèque striatâ; suturis impressis; anfractibus octonis, subconvexis; aperturâ parvâ, ellipticâ; columellâ incurvatâ.

Shell somewhat cylindrical, horn colour, thin, longitudinally and beautifully striate; sutures impressed; whorls eight, rather convex; aperture small, elliptical; columella incurved.

Hab. Liberia. Dr. Blanding. My Cabinet and Cabinet of Dr. Blanding. Diam. .12, Length .38 of an inch.

Remarks.—This is a beautiful little species, rather larger than the *folliculus*, Lam. In form it resembles *Bulimus octoneus*, Rang. (*Achatina,*) but is not quite so large. Its minute and close ribs distinguish it at once, as the *octoneus* is perfectly smooth. The aperture is about one-fourth the length of the shell, and the striæ do not extend below the middle part of the lower whorl.

GENUS SUCCINEA. (DRAPARNAUD.)

Eight species of *Succinea* have been described as inhabiting the United States. I now propose to add nine to that number, besides three from the West Indies and East Indies.

SUCCINEA GRACILIS.

Testâ longo-ovatâ, obliquâ, exsertâ, subdiaphanâ, striatâ, pallido-luteâ; spirâ elevatâ; suturis impressis; anfractibus subconvexis; aperturâ longo-ovatâ.

Shell long-ovate, oblique, exserted, subdiaphanous, striate, pale yellow; spire elevated; sutures impressed; whorls subconvex; aperture long-ovate.

Hab. Java? My Cabinet. Diam. .32, Length .42 of an inch.

Remarks.—I procured a single specimen of this graceful and delicate species in New York of a dealer some years since. He informed me that it came from the collection of Mr. Shillaber, which was brought from Batavia. In form it resembles *S. Nuttalliana* herein described, but it is a much more exserted species and larger. The whorls below the sutures are impressed. The striæ are larger and more distant near to the aperture. A small portion only of the epidermis remains, and that is dark. The point of the spire is fractured, and therefore the number of the whorls is not mentioned. I suppose, when perfect there will be found three. The want of the usual transparency may be occasioned by the specimen not being fresh.

SUCCINEA WARDIANA.

Testâ obliquo-ovatâ, subnitidâ, diaphanâ, obsoletè striatâ, luteâ; spirâ breviusculâ; suturis subimpressis; anfractibus ternis, convexis; aperturâ subrotundâ.

Shell obliquely ovate, somewhat shining, diaphanous, obsoletely striate, yellowish; spire rather short; sutures rather impressed; whorls three, convex; aperture nearly round.

Hab. Ohio. Dr. Ward. My Cabinet and Cabinet of P. H. Nicklin. Diam. .20, Length .32 of an inch.

Remarks.—This species was sent to me by the late Dr. Ward from Roscoe, in the northern part of Ohio, and I presume came from the vicinity of that place. It is allied to *S. vermeta,* (Say,) but has a less exserted spire and is not quite so oblique. It is also a smaller species. The aperture is about two-thirds the length of the shell.

SUCCINEA TOTTENIANA.

Testâ obliquo-ovatâ, subnitidâ, subdiaphanâ, obsoletè striatâ, corneâ; spirâ brevi; suturis impressis; anfractibus ternis, convexis; aperturâ ellipticâ.

Shell obliquely ovate, somewhat shining, rather transparent, obsoletely striate, horn colour; spire short; sutures impressed; whorls three, convex; aperture elliptical.

Hab. Newport, Rhode Island. Col. Totten, United States Army. My Cabinet, and Cabinets of Col. Totten, and P. H. Nicklin. Diam. .30, Length .48 of an inch.

Remarks.—Many years since Col. Totten sent me this species. Never having been able to identify it with any described species, I now propose to name it after him. It is rather an inflated species, but not so much so as the *obliqua,* (Say,) nor is it so large. It resembles the *ovalis,* (Say,) but is rather smaller, more oblique and less inflated. The aperture is rather more than two-thirds the length of the shell, and the apex is very small, somewhat mamillate. The epidermis is rather dark. The substance of the shell is slightly iridescent, giving it an opalescent appearance, and this is slightly observed through the epidermis.

SUCCINEA NUTTALLIANA.

Testâ longo-ovatâ, obliquâ, subnitidâ, diaphanâ, striatâ, pallido-luteâ; spirâ subelevatâ; suturis impressis; anfractibus ternis, subconvexis; aperturâ longo-ovatâ.

Shell long-ovate, oblique, transparent, striate, pale yellow; spire rather elevated; sutures impressed; whorls three, somewhat convex; aperture long-ovate.

Hab. Oregon. Prof. Nuttall. My Cabinet and Cabinets of Prof. Nuttall, and Dr. Jay. Diameter .25, Length .50 of an inch.

Remarks.—A very oblique, slender and graceful species, allied to *retusa* nobis, but smaller, less elongated, and not having the inferior part or base quite so retuse. The aperture is about three-fourths the length of the shell.

SUCCINEA AUREA.

Testâ obliquo-ovatâ, nitidâ, diaphanâ, lævi, aureâ; spirâ subelevatâ; suturis impressis; anfractibus ternis, convexis; aperturâ ovatâ.

Shell obliquely ovate, shining, transparent, smooth, golden; spire rather elevated; sutures impressed; whorls three, convex; aperture ovate.

Hab. Springfield, Ohio. T. G. Lea. My Cabinet and Cabinets of T. G. Lea, and P. H. Nicklin. Diam. .20, Length .32 of an inch.

Remarks.—This is a beautiful little species, remarkable for its fine surface and bright golden colour. In form it is nearly allied to *vermeta,* (Say.) In colour it has some resemblance to a species sent to me by M. D'Orbigny, from Paris, under the name of *putris,* Lin., and obtained by him in Colombia. His shell is quite different from the *putris* of Europe, and I propose the name of the distinguished traveller for it; if I am correct, *Succinea Dorbigniana.* The aperture of the *aurea* is about three-fifths the length of the shell.

SUCCINEA CANDÈANA.

Testâ obliquo-ovatâ, subnitidâ, obsoletè varicosâ, diaphanâ, roseâ; spirâ brevi; suturis subimpressis; anfractibus ternis, inflatis; aperturâ lato-ovatâ.

Shell obliquely ovate, somewhat shining, obsoletely varicose, diaphanous, rose colour; spire short; sutures impressed; whorls three, inflated; aperture wide-ovate.

Hab. Martinique. Lieut. Candè. My Cabinet and Cabinet of M. Candè, Paris. Diam. .58, Length .85 of an inch.

Remarks.—Lieut. Candè, of the French navy, was kind enough, a few years since, to give me, among many interesting shells, collected in the Island of Martinique, several specimens of this *Succinea*, which I name after him. I am not aware that it has elsewhere been noticed. In form and size it resembles *S. obliqua*, (Say.) It is, however, larger, has the sutures less impressed, of a redder colour, and in its varicose markings entirely differs. It has some resemblance to that species figured by Ferussac, pl. II. A. fig. 7, but it is more inflated, and the spire is much more obtuse.

SUCCINEA FULGENS.

Testâ obliquo-ovatâ, fulgens, diaphanâ, striatâ, aureâ; spirâ subelevatâ; suturis impressis; anfractibus ternis, convexis; aperturâ lato-ovatâ.

Shell obliquely ovate, brilliant, diaphanous, striate, golden colour; spire rather elevated; sutures impressed; whorls three, convex; aperture wide-ovate.

Hab. Cuba. M. Poey. My Cabinet. Diam. .30, Length .45 of an inch.

Remarks.—Among other land shells received some years since from Mr. Poey, who had under his charge the Botanic Garden of Havana, I received a single specimen of *Succinea* which does not appear to me to have been described. In form it somewhat resembles the *ovalis*, (Say,) but differs in size and colour. In its brilliant colour it is allied to *S. aurea* herein described. It is, however, less brilliant, more inflated, and quite double the size. The aperture is about two-thirds the length of the shell, and the apex takes a reddish hue.

SUCCINEA OREGONENSIS.

Testâ obliquâ, tenui, rugoso-striatâ, rufâ, subdiaphanâ; spirâ exsertâ; suturis valdè impressis; anfractibus ternis, inflatis; aperturâ magnâ, lato-ovatâ.

Shell oblique, thin, rugosely striate, reddish, subdiaphanous; spire exserted; sutures much impressed; whorls three, inflated; aperture large, wide-ovate.

Hab. Oregon. Prof. Nuttall. My Cabinet, and Cabinets of Prof. Nuttall, and Dr. Jay. Diam. .15, Length .30 of an inch.

Remarks.—A single specimen only of this small species was given to me by Mr. Nuttall. It nearly answers to Mr. Say's description of *S. avara*, but differs in size, colour and form from that usually received as his species. The spire is elevated for a *Succinea*, and curls somewhat like a worm. The aperture is a good deal rounded, and is about two-thirds the length of the shell.

SUCCINEA INFLATA.

Testâ subrotundâ, inflatâ, tenui, lacteâ; spirâ brevi; suturis subimpressis; anfractibus ternis, rotundatis; aperturâ lato-ovatâ.

Shell subrotund, inflated, thin, milk-white; spire short; sutures impressed; whorls three, rounded; aperture wide-ovate.

Hab. South Carolina. Prof. Ravenel. My Cabinet, and Cabinet of Prof. Ravenel. Diam. .30, Length .45 of an inch.

Remarks.—Many years since Prof. Ravenel sent me several specimens of this species under the name of *S. campestris*, (Say.) It does not, however, answer entirely to Say's description, and it certainly is not the same species with those placed in the Philadelphia Museum under that name by him. It is a more inflated species. It is quite white, with a few semi-transparent longitudinal lines. The aperture is about three-fourths the length of the shell.

PLANORBIS. (LAMARCK.)

Seventeen species of the genus *Planorbis* have been described as inhabiting the waters of the United States, and I now propose to add three to that number. Lamarck described twelve, of which eight inhabit Europe.

PLANORBIS REGULARIS.

Testâ subglobosâ, supernè subplanâ, subtus angusto-umbilicatâ, pellucidâ, pallido-luteâ, obsoletè striatâ; anfractibus ternis, supernè carinatis; labro acuto, marginato, intus incrassato; aperturâ ovatâ.

Shell subglobose, above nearly flat, beneath narrow umbilicate, pellucid, pale yellow, obsoletely striate; whorls three, above carinate; lip acute, margined, within thickened; aperture ovate.

Hab. United States. My Cabinet and Cabinet of P. H. Nicklin. Diam. .30, Length .20 of an inch.

Remarks.—I have unfortunately mislaid the label which accompanied the shells from which the above descriptions were made. My impression is that they came from one of the Western States. All the specimens before me are very much alike in size and form, being exceedingly regular. The striæ are more perceptible around the umbilicus and on the spire. On the side they are so much obliterated as to permit the whorl to present a shining appearance. The carina is very sharp and well defined. It has very much the appearance of a young *trivolvis*, (Say,) and may possibly be only a variety of that species.

PLANORBIS BUCHANENSIS.

Testâ sublenticulari, supernè subconvexâ, ad periphæriam carinatâ, subtus angusto-umbilicatâ, vel corneâ vel subfuscâ, lævi; anfractibus ternis; labro acuto; aperturâ rotundâ.

Shell sublenticular, above subconvex, carinate at the periphery, beneath narrow umbilicate, horn-colour or brownish, smooth; whorls three; lip sharp; aperture rounded.

Hab. Near Cincinnati, Ohio. R. Buchanan. My Cabinet, and Cabinets of T. G. Lea, and R. Buchanan. Diam. .12, Length .08 of an inch.

Remarks.—Several specimens of this species were sent to me several years since by my brother T. G. Lea, who informed me that they were first observed by Mr. Buchanan, after whom I name it. This species is very nearly allied to *P. lens*,* nobis, but it may at once be distinguished by its round aperture, which is somewhat spread out. The aperture of the *lens*, (now *lenticularis*,) is *triangular*, and the size of the shell rather larger.

PLANORBIS BELLUS.

Testâ orbiculari, supernè plano-concavâ, subtus lato umbilicatâ, virido-luteâ, crebrissimè et elegantissimè striatâ; anfractibus quaternis, supernè carinatis, subtus subcarinatis; labro acuto; aperturâ parvâ, subrotundâ, intus rufo-fuscâ.

Shell orbicular, above regularly concave, beneath widely umbilicate, greenish yellow, closely and beautifully striate; whorls four, carinate above, subcarinate below; lip sharp; aperture small, within reddish brown.

Hab. Tennessee. Dr. Troost. My Cabinet, and Cabinet of Dr. Troost. Diam. .40, Length .22 of an inch.

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* This name being preoccupied, I propose to change it to *lenticularis*.

Remarks.—A single specimen only of this species was received from Dr. Troost. Like the *P. corpulentus*, (Say,) it is covered with striæ, but in the *bellus* they are much closer and more regular. It is a much less inflated shell, and more regular in its form.

PHYSA. (LAMARCK.)

The genus *Physa*, established, as some authors say, for the reversed species of *Lymnæa*, is abundant in the fresh waters of our country. There have been twelve species heretofore described as inhabiting the United States, and I now propose to add three more to the number.

As to the propriety of the separation from *Lymnæa*, I have no doubt. To those who have been familiar with many species of the two genera, their distinctive characters will, I think, be perfectly apparent. Lamarck described only four species.

PHYSA HILDRETHIANA.

Testâ ellipticâ, subcompressâ, longâ, subpellucidâ; spirâ obtuso-elevatâ; anfractibus quinis; labro marginato; aperturâ longâ, compressâ.

Shell elliptical, somewhat compressed, long, somewhat pellucid; spire obtusely elevated; whorls five; lip margined; aperture long, compressed.

Hab. A lake in Illinois. Dr. Hildreth. My Cabinet, and Cabinet of Dr. Hildreth. Diam .40, Length .75 of an inch.

Remarks.—This species is among the largest, and is perhaps the most remarkable *Physa* yet observed in this country. The aperture is little more than half the length of the shell. The apex is very obtuse, and the whole shell is somewhat cylindrical. A single specimen was brought by Mr. Nicklin from Dr. Hildreth, and I name it after him, as he seems first to have observed it.

PHYSA INFLATA.

Testâ inflatâ, tenebrosâ, subpellucidâ; spirâ subelevatâ, acuto-conicâ; anfractibus quinis; labro marginato inflato; aperturâ latâ.

Shell inflated, dark, somewhat pellucid; spire somewhat elevated, acutely conical; whorls five; outer lip margined and inflated; aperture wide.

Hab. Virginia, between the Salt Sulphur, and the Sweet Springs. P. H. Nicklin. My Cabinet and Cabinet of Mr. Nicklin. Diam. .48, Length .65 of an inch.

Remarks.—Two specimens were taken by Mr. Nicklin in a small stream which crosses the road in a gap in the main chain of the Alleghany Mountain between the Salt Sulphur and the Sweet Springs in Virginia. The gap is nearly level for several miles, and some of the streams run to the West and some to the East. This species seems to me to differ from any with which I am acquainted. It is perhaps most nearly allied to *P. heterostropha*, (Say,) but has a shorter aperture and is more inflated.

PHYSA TROOSTIANA.

Testâ ellipticâ, subcrassâ, luteo-fuscâ, lævi; spirâ obtusâ; suturis subimpressis; anfractibus quinis, subconvexis; labro marginato, intus incrassato; aperturâ parvâ, ovatâ, contractâ.

Shell elliptical, rather thick, yellow-brown, smooth; spire obtuse; sutures slightly impressed; whorls five, slightly convex; lip margined, thickened within; aperture small, ovate, contracted.

Hab. Near Nashville, Tennessee. Dr. Troost. My Cabinet and Cabinet of Dr. Troost. Diam. .25, Length .45 of an inch.

Remarks.—This is a short, obtuse species about the size of *P. aurea*, (nobis.) The substance of the shell is very thick for the genus, and it is much more thickened within the margin than any species I have observed. The line along the margin of the lip is of a reddish brown. The indentation of the columella is lower than usual. The aperture is about two-thirds the length of the shell.

GENUS LYMNÆA. (LAMARCK.)

The genus *Lymnæa* seems to be widely distributed round the globe. Lamarck describes seven species as indigenous to France. We have had twenty-seven species described by Mr. Say, and other American zoologists, and to them I now propose to add sixteen from our own country, including several brought by Mr. Nuttall from Oregon, besides one taken by this traveller from Oahu.

In the enumeration above, I include Mr. Say's *L. appressa*, although my conviction has been for a long time that it is only the analogue of *stagnalis* of Europe. I have taken it on the St. Lawrence, and my cabinet is also possessed of American specimens from Vermont, Ohio, and Oregon. Its geographical distribution is probably wider than that of any other species of *Lymnæa.*

LYMNÆA PHILADELPHICA.

Testâ ovato-conicâ, tenui, striatâ, nitidâ, diaphanâ, subaureâ, imperforatâ; spirâ subelevatâ; suturis valdè impressis; anfractibus quinis, convexis; aperturâ angusto-ellipticâ.

Shell ovately conical, thin, striated, shining, diaphanous, rather golden, imperforate; spire rather elevated; sutures much impressed; whorls five, convex; aperture narrow-elliptical.

Hab. River Schuylkill, near Philadelphia. My Cabinet, and Cabinets of P. H. Nicklin, and Dr. Griffith. Diam. .20, Length .48 of an inch.

Remarks.—This species is about the size of, and is allied to *plica* and *Griffithiana*, herein described, and to *modicella*, (Say.) It has a more elongated aperture than *Griffithiana*, has a smaller fold than *plica*, and is higher in the spire than *modicella*. The aperture is about half the length of the shell. I procured many specimens west of Philadelphia. Dr. Griffith informs me that he found them common south of the city.

LYMNÆA GRIFFITHIANA.

Testâ ovato-conicâ, tenui, substriatâ, nitidâ, subdiaphanâ, luteo-corneâ, perforatâ; spirâ breviusculâ; suturis impressis; anfractibus quinis, convexis; aperturâ ellipticâ.

Shell ovately conical, thin, substriate, shining, somewhat diaphanous, yellowish horn-colour, perforate; spire rather short; sutures impressed; whorls five, convex; aperture elliptical.

Hab. Charlotte Lake, Columbia County, New York. Dr. Griffith. My Cabinet, and Cabinets of Dr. Griffith, and Philadelphia Museum. Diam. .20, Length .30 of an inch.

Remarks.—Rather a small species, differing from most in the form of the mouth, which is nearly a perfect ellipse. In a perfect specimen before me the aperture within the margin of the lip is thickened by a raised line. The aperture is not quite one-half the length of the shell. I name it after R. E. Griffith, M. D., who seems to be the only person who has observed it.

LYMNÆA NUTTALLIANA.

Testâ ovato-conicâ, subtenui, striatâ, subdiaphanâ, pallido-fuscâ, imperforatâ; spirâ breviusculâ; apice rufâ; suturis impressis; anfractibus senis, convexis; aperturâ ovatâ, inflatâ, intus fasciatâ.

Shell ovately conical, rather thin, striate, subdiaphanous, pale brown, imperforate; spire rather short; apex red; sutures impressed; whorls six, convex; aperture ovate, inflated, banded within.

Hab. Oregon. Prof. Nuttall. My Cabinet and Cabinets of Prof. Nuttall, and Dr. Jay. Diam. .50, Length .95 of an inch.

Remarks.—A fine, rather robust species, resembling *L. elodes*, (Say,) but shorter and more inflated and having a larger and more curved fold. The aperture is rather more than one-half the length of the shell, and is retuse at the lower part. Under the lens may be observed very minute revolving striæ. The band within the aperture is removed from the edge of the lip, and is broad and brown. The lip is not reflexed.

LYMNÆA BULIMOIDES.

Testâ ovato-conicâ, subtenui, lævi, nitidâ, diaphanâ, fusco-luteâ, minutè perforatâ; spirâ breviusculâ; suturis parvis; anfractibus quinis, subconvexis; aperturâ ovatâ.

Shell ovately conical, rather thin, smooth, shining, diaphanous, brownish yellow, slightly perforate; spire rather short; sutures small; whorls five, slightly convex; aperture ovate.

Hab. Oregon. Prof. Nuttall. My Cabinet, and Cabinet of Prof. Nuttall. Diam. .22, Length .38 of an inch.

Remarks.—Among the shells taken by Prof. Nuttall during his journey over the Rocky Mountains, was this small species, the aperture of which is formed very much like a *Bulimus*. The deposite of the columella is wide, and nearly covers the perforation, which consequently is very small. The aperture is more than half the length of the shell, and the fold obsolete. Several of the specimens, although the substance of the shell is thin, have the apex eroded, some of the superior whorls being entirely gone. I have not observed this to be the case in any other *Lymnæa*.

LYMNÆA EXIGUA.

Testâ subfusiformi, tenui, striatâ, subdiaphanâ, pallido-luteâ, perforatâ; spirâ breviusculâ; suturis impressis; anfractibus quinis, subconvexis; aperturâ ellipticâ.

Shell subfusiform, thin, striated, subdiaphanous, pale yellow, perforate; spire rather short; sutures impressed; whorls five, rather convex; aperture elliptical.

Hab. Tennessee. Dr. Troost. My Cabinet and Cabinet of Dr. Troost. Diam. .15, Length .35 of an inch.

Remarks.—This is a small species about the size of *L. plica*, herein described, and in outline resembling it. It differs, however, altogether in the columella, which is nearly straight, and the folds scarcely observable. The aperture is about one-half the length of the shell, and contracted at the lower part.

LYMNÆA PLANULATA.

Testâ ovato-conicâ, tenui, lævi, subdiaphanâ, fuscâ, perforatâ; spirâ breviusculâ; suturis impressis; anfractibus quinis, convexis; aperturâ parvâ, ovatâ.

Shell ovately conical, thin, smooth, subdiaphanous, brown, perforate; spire rather short; sutures impressed; whorls five, convex; aperture small, ovate.

Hab. White Sulphur Springs, Virginia. P. H. Nicklin. My Cabinet and Cabinet of P. H. Nicklin. Diam. .15, Length .35 of an inch.

Remarks.—Several specimens of this small species are before me, one of them considerably larger than the other, and possessing one more whorl. The whorls are inflated, but flattened in the middle. This gives a roundness to their superior part. The perforation is small, and the fold scarcely observable. The aperture is less than half the length of the shell, and contracted.

LYMNÆA FUSIFORMIS.

Testâ fusiformi, subcrassâ, crebrè striatâ, pallido-luteâ, imperforatâ; spirâ breviusculâ; suturis leviter impressis; anfractibus senis, planulatis; aperturâ angusto-ellipticâ.

Shell fusiform, rather thick, closely striate, pale yellow, imperforate; spire rather short; sutures slightly impressed; whorls six, flattened; aperture narrow-elliptical.

Hab. Niagara river, Lewistown, New York. Tobias Wagner. My Cabinet, and Cabinets of P. H. Nicklin, and Tobias Wagner. Diam. .35, Length .60 of an inch.

Remarks.—Among a number of interesting shells collected by Mr. T. Wagner, during a long journey in the interior of our country, were several specimens of this species, which has not been, I believe, before noticed. It is found with and is somewhat allied to *L. decidiosa*, (Say.) It differs in being more fusiform, having a larger aperture and flatter whorls, and in being imperforate. It is about the size of, and resembles *L. casta*, herein described. It differs in being less elevated in the spire, in the whorls being more flattened, in having a distinct and curved fold, and in being imperforate. The aperture is nearly two-thirds the length of the shell. The last two whorls are disposed to be wrinkled.

LYMNÆA RUSTICA.

Testâ subfusiformi, tenui, imperforatâ; spirâ subelevatâ; suturis impressis; anfractibus quinis, subconvexis; aperturâ angusto-ellipticâ.

Shell subfusiform, thin, imperforate; spire rather elevated; sutures impressed; whorls five, rather convex; aperture narrow elliptical.

Hab. Poland, Ohio. Dr. Kirtland. My Cabinet, and Cabinet of Dr. Kirtland. Diam. .15, Length .35 of an inch.

Remarks.—A single specimen only of this was received with some other species. It is a small and rather slender species, with a regular tapering spire and an aperture about half the length of the shell. The whole shell is covered over with a red coating of the oxide of iron, giving it a rough aspect.

LYMNÆA PLICA.

Testâ turritâ, subtenui, luteâ, striatâ, imperforatâ; spirâ subelevatâ; suturis impressis; anfractibus quinis, convexis; aperturâ parvâ, ellipticâ.

Shell turrited, rather thin, yellow, striate, imperforate; spire rather elevated; sutures impressed; whorls five, convex; aperture small, elliptical.

Hab. Tennessee. Dr. Troost. My Cabinet, and Cabinet of Dr. Troost. Diam. .18, Length .38 of an inch.

Remarks.—A small species, with a large incurved fold. It resembles *L. exigua*, herein described, in size, but in the form of the columella it is entirely different. The aperture is about half the length of the shell.

LYMNÆA COARCTATA.

Testâ fusiformi, tenuissimâ, obsoletè striatâ, diaphanâ, corneâ, imperforatâ; spirâ brevi, mucronatâ; suturis leviter impressis; anfractibus quaternis, subplanulatis; aperturâ grandi, ovatâ.

Shell fusiform, very thin, obsoletely striate, diaphanous, horn colour, imperforate; spire short, pointed; sutures slightly impressed; whorls four, rather flattened; aperture large, ovate.

Hab. Newport, Rhode Island. Col. Totten, United States Army. My Cabinet, and Cabinet of Col. Totten. Diam. .30, Length .55 of an inch.

Remarks.—This is one of the most delicate and fragile of the genus *Lymnæa*, which I have seen. It is allied to Mr. Say's *columella*, but may at once be distinguished by the compression of the superior part of the body whorl, which causes an acute angle in the superior part of the aperture. Under a rather powerful lens, some of the specimens may be perceived to have very minute revolving striæ. The aperture is two-thirds the length of the shell, and is inflated at the inferior part. The fold of the columella is delicate and incurved.

LYMNÆA CASTA.

Testâ subfusiformi, subcrassâ, crebrè striatâ, luteâ, perforatâ; spirâ subelevatâ, acuminatâ; suturis impressis; anfractibus senis, convexis; aperturâ grandi, ovatâ.

Shell subfusiform, rather thick, closely striate, yellow, perforate; spire rather elevated, accuminate; sutures impressed; whorls six, convex; aperture large, ovate.

Hab. Poland, Ohio. Dr. Kirtland. My Cabinet, and Cabinets of Dr. Kirtland and T. G. Lea. Diam. .30, Length .58 of an inch.

Remarks.—The columella of this species is remarkably straight, and being reflected causes the lower part of the aperture to be slightly effuse. The last whorl is wrinkled. The aperture is more than half the length of the shell. It is allied to *L. decidiosus*, (Say,) but is a smaller species, has the spire more exserted, and a less curved fold. The perforation is very small. Dr. Kirtland kindly sent me many specimens several years since.

LYMNÆA PARVA.

Testâ subturritâ, tenui, lœvi, diaphanâ, corneâ, subperforatâ; spirâ elevatâ; suturis impressis; anfractibus quinis, convexis; aperturâ ellipticâ.

Shell subturrited, thin, smooth, diaphanous, horn colour, subperforate; spire elevated; sutures impressed; whorls five, convex; aperture elliptical.

Hab. Cincinnati, Ohio. T. G. Lea. My Cabinet, and Cabinet of T. G. Lea. Diam. .12, Length .22 of an inch.

Remarks.—This is the smallest species which has come under my notice. In general form it resembles *L. curta*, herein described. It is rather less inflated, has a longer aperture, and is more diminutive. The perforation, too, is smaller, and the columella more curved. The two specimens before me have the superior whorls black from the deposite of the oxide of iron. The aperture is about half the length of the shell.

LYMNÆA CURTA.

Testâ subturritâ, subtenui, nitidâ, subdiaphanâ, luteâ, perforatâ; spirâ elevatâ; suturis impressis; anfractibus senis, convexis; aperturâ parvâ, ellipticâ.

Shell subturrited, rather thin, shining, subdiaphanous, yellow, perforate; spire elevated; sutures impressed; whorls six, convex; aperture small, elliptical.

Hab. Cincinnati, Ohio. T. G. Lea. Poland, Ohio. Dr. Kirtland. My Cabinet, and Cabinets of T. G. Lea, and Dr. Kirtland. Diam. .18, Length .32 of an inch.

Remarks.—A very small erect species resembling in the form of the aperture, a *Bulimus,* the fold being scarcely perceptible. In its general outline it resembles a *Paludina,* more than most *Lymnææ.* In these characters it is allied to *L. bulimoides* herein described. The aperture is rather more than one-third the length of the shell, and the last whorl is wrinkled. The columella is thickened, and reflected over the perforation.

LYMNÆA STRIGOSA.

Testâ longo-ovatâ, subobliquâ, diaphanâ, striatâ, corneâ, tenui, imperforatâ; spirâ brevi; suturis impressis; anfractibus quinis, subconvexis; aperturâ ovatâ.

Shell long oval, somewhat oblique, diaphanous, striate, horn-coloured, thin, imperforate; spire short; sutures impressed; whorls five, somewhat convex; aperture ovate.

Hab. Near Cincinnati, Ohio. T. G. Lea. My Cabinet, and Cabinet of T. G. Lea. Diam. .38, Length .75 of an inch.

Remarks.—This is a very thin fragile species somewhat resembling *L. columella,* (Say,) but may at once be distinguished from that species by its longer spire and less inflated body whorl. It is allied to *L. coarctata,* herein described, differing, however, in being more oblique and in having the whorls more inflated. The aperture is about three-fourths the length of the shell, and acutely angular above.

LYMNÆA KIRTLANDIANA.

Testâ turritâ, tenui, enormiter striatâ, pallido-corneâ, imperforatâ; spirâ elevatâ, attenuatâ; suturis impressis; anfractibus senis, subconvexis; aperturâ angusto-ellipticâ.

Shell turrited, thin, irregularly striate, pale horn colour, imperforate; spire elevated, attenuate; sutures impressed; whorls six, slightly convex; aperture narrow elliptical.

Hab. Poland, Ohio. Dr. Kirtland. My Cabinet, and Cabinets of Dr. Kirtland and T. G. Lea. Diam. .26, Length .70 of an inch.

Remarks.—Many years since Dr. Kirtland sent me several specimens of this shell. I am not aware of its having yet been described. It may have been mistaken for *L. acuta,* (nobis,) being about the size and having the aspect of that shell. It may be distinguished from it, by having a longer and narrower body whorl, and a shorter and narrower aperture. The fold on the columella is smaller and the outer lip less curved. It is a smaller species than the *reflexa,* (Say,) has one whorl less and the mouth is longer. In other characters it resembles it, if the reflected lip be excepted. The aperture is rather less than half the length of the shell. Most of the specimens have an obscure brown line within the margin of the outer lip. The body whorl is disposed to be flattened, and is irregularly wrinkled. Under the lens the fine striæ which usually are found in the *Lymnææ,* may be observed beautifully displayed over the whole shell. The superior portion of all the specimens sent, have more or less deposite of the oxide of iron, which gives them the appearance of having two colours.

LYMNÆA RUBELLA.

Testâ ovato-conicâ, tenui, lævi, nitidâ, diaphanâ, rubellâ, imperforatâ; spirâ breviusculâ; suturis parvis; anfractibus quinis, subconvexis; aperturâ subgrandi, ovatâ.

Shell ovately conical, thin, smooth, shining, diaphanous, reddish, imperforate; spire rather short; sutures small; whorls five, somewhat convex; aperture rather large, ovate.

Hab. Oahu. Prof. Nuttall. My Cabinet, and Cabinet of Prof. Nuttall. Diam. .20, Length .35 of an inch.

Remarks.—This is a small species procured by Prof. Nuttall during his sojourn at the Sandwich Islands. It is rather smaller than Say's *modicella*, but may be distinguished by its reddish colour, bright surface and distinct fold. The aperture is more than half the length of the shell. The lip is margined by a red line on the inside where the specimen is mature. Some individuals are covered by a deposite of ferruginous matter.

PALUDINA. (LAMARCK.)

Lamarck described seven species of this genus, five of them being European. In the United States, the species are quite numerous. Mr. Say described thirteen, one of which (*dissimilis*,) properly belongs to his genus *Anculosa*, and three (*limosa, porata and lustrica*,) may be transferred to Dr. Gould's genus *Amnicola*. Fifteen others have been proposed by myself and other naturalists, and I now add three to the number.

PALUDINA REGULARIS.

Testâ subglobosâ, subcrassâ, virido-corneâ, lævi, imperforatâ; spirâ brevissimâ; suturis impressis; anfractibus quinis, convexis; aperturâ magnâ, ovatâ, intus cæruleâ.

Shell subglobose, rather thick, greenish horn colour, imperforate; spire very short; sutures impressed; whorls five, convex; aperture large, ovate, within bluish.

Hab. Ohio? T. G. Lea. My Cabinet, and Cabinet of T. G. Lea. Diam. .38, Length .52 of an inch.

Remarks.—A very distinct species with the body whorl about four-fifths the length of the shell. The whorls are very regular, giving the spire somewhat the appearance of a coil of rope. All the specimens before me are more or less incrusted with the oxide of iron. The aperture is inflated, and about three-fourths the length of the shell.

I am not positively sure that this species came from Ohio. By some accident the label has been misplaced, but I am under the impression it came with some other species from my brother at Cincinnati.

PALUDINA OBTUSA.

Testâ subcylindraceâ, subtenui, tenebroso-viridi, lævi, minutè perforatâ; spirâ brevi, ad apicem valdè obtusâ; suturis impressis; anfractibus quaternis, convexis; aperturâ parvâ, subrotundâ.

Shell subcylindrical, rather thin, dark green, smooth, slightly perforate; spire short, at the beaks very obtuse; sutures impressed; whorls four, convex; aperture small, nearly round.

Hab. Ohio. Dr. Kirtland. My Cabinet, and Cabinet of Dr. Kirtland. Diam. .07, Length .10 of an inch.

Remarks.—This is among the smallest of the genus, and may at once be distinguished by its obtuse apex which has the appearance almost of being truncate. The whorls do not decrease regularly from the lower one to the apex, the greatest diameter being apparently across the second whorl. In form, therefore, it has the aspect of a *Pupa*. It answers partly to the description of *Paludina Alleghaniensis*, (Green,) but seems to differ in the truncate appearance of the apex, and in the size. Two specimens were found in a box with some other small species, kindly sent to me by Dr. Kirtland. It is rather less than *P. Nickliniana*, and differs from it in being less tapering to the apex. It very closely resembles *P. viridis*, (Lam.) but is rather larger and more obtuse. There were no opercula to examine in these specimens. Aperture rather more than one-third the length of the shell.

PALUDINA TROOSTIANA.

Testâ ventricoso-conoideâ, tenui, pellucidâ, luteo-corneâ, lævi, perforatâ; spirâ brevi; suturis valdè impressis; anfractibus quaternis, convexis; aperturâ magnâ, rotundatâ, albâ.

Shell ventricoso-conical, thin, pellucid, yellowish horn colour, smooth, perforate; spire short; sutures very much impressed; whorls four, convex; aperture large, rounded, white.

Hab. Tennessee. Prof. Troost. My Cabinet, and Cabinet of Prof. Troost. Diam. .68, Length .72 of an inch.

Remarks.—This is a subglobose species, differing from any which has come under my notice, in having the superior portion of the last whorl somewhat flattened, giving the shell a somewhat gibbous appearance. The operculum is rather of a light colour, and the plane of the aperture is very retuse at its base. It has a strong resemblance to *P. unicolor*, (Lamarck,) and perhaps a stronger one to *P. Maheyana*, (Grateloup.) It is more depressed in the spire than either, and the perforation is smaller than in the former, while it is nearly the size of that in the latter. The aperture is larger than either. Dr. Grateloup has very properly, I think, separated the Malabar species from that which was observed by Olivier in Egypt, and called *unicolor* by Lamarck. The Egyptian shell has a larger perforation, is darker in colour, and is a larger species. I call this after my friend Prof. Troost.

GENUS ANCULOSA. (SAY.)

The genus *Anculosa* was proposed by Mr. Say, in the Journal of the Academy of Natural Sciences, vol. 2, p. 178, (1821,) for a new shell, which he then described under the name of *Melania prærosa.* I am not aware that he ever published a description of his proposed genus, but he then mentioned, that it did not correspond with the genus to which he "at present referred it," and he farther says, that "owing to the configuration of the base of the columella, if it is not a *Melanopsis*, it is probable its station will be between the genera *Melania* and *Achatina.*"

Four years afterwards, in describing a new species of the same group, under the name of *Melania subglobosa*, he says, "It is a second species of my proposed genus *Anculotus.*" He does not allude to the fact of having changed the termination of the name of his proposed genus. I have, therefore, always made use of the first, believing that the change was made through inadvertence. Mr. Haldeman, in his "Monograph of the Limniades," very properly uses *Anculosa*, while Mr. Conrad, in his "New Fresh Water Shells," with some other zoologists, uses *Anculotus.*

The generic characters of the shell of this animal, are difficult in some cases to seize, as the form of the aperture varies, as well as the form of the spire, (notwithstanding its name,) in many species.

Mr. Haldeman seems first to have observed the animal, which he found to differ from *Melania.* He describes it, as having a "very small foot, adapted for holding; animal sedentary; inhabits very rapid water, attached to stones." This of course separates it from *Melania*, and the "obvious characters" of the shell will generally distinguish it from both *Melania* and *Paludina*, as it has usually a callous columella, and a rounded aperture. The operculum, like that of *Melania*, is subspiral; at the same time it appears to me, that the point of radiation in that of *Anculosa* is usually nearer the margin. In the older specimens, the point of radiation is often directly on the margin. This, probably, is owing to part of it being worn away by the motion of the animal.

I am not aware, of this genus having been observed out of the United States. There have been seventeen species described, nearly all of which will stand, and I now propose to add four to that number.

ANCULOSA TROOSTIANA.

Testâ ovato-conicâ, crassâ, minutè rugosâ, tenebroso-fuscâ; spirâ subelevatâ; suturis subimpressis; anfractibus planulatis; aperturâ rotundâ, intus cæruleâ; columellâ crassâ, vel albâ vel carneâ.

Shell ovately conical, thick, minutely rugose, dark brown; spire somewhat elevated; sutures rather impressed; whorls flattened; aperture rounded, within bluish; columella thick, white or flesh-coloured.

Hab. Tennessee. Professor Troost. My Cabinet, and Cabinet of Professor Troost. Diam. .50, Length .60 of an inch.

Remarks.—There are many specimens before me, all of which in form are unusually alike, for a species of *Anculosa.* It differs from other species which have come under my notice, in its spire, which is quite elevated, giving it the aspect of the genus *Melania.* Small irregular wrinkles, or granulations, may be observed over the whole surface in most specimens, and I believe this will generally be found to be more or less the case with most of the species.

ANCULOSA GIBBOSA.

Testâ subglobosâ, gibbosâ, crassâ, subnigrâ, crebrè striatâ; spirâ brevi; suturis impressis; anfractibus subplanulatis; aperturâ subquadrangulari, vel carneâ vel albidâ.

Shell subglobose, gibbous, thick, nearly black, thickly striate; spire short; sutures impressed; whorls rather flattened; aperture subquadrangular, flesh-coloured or whitish.

Hab. Tennessee. Professor Troost. My Cabinet, and Cabinet of Prof. Troost. Diam. .50, Length .68 of an inch.

Remarks.—This species is about the size of *An. subglobosa,* (Say.) It is not so regularly rounded, being flattened on the upper part of the whorl. The striæ are minute, and seem to be formed by the lines of growth. There is quite a callus on the superior part of the columella, the middle part being deeply impressed. The number of whorls could not be ascertained from my specimens, all of them being more or less eroded.

ANCULOSA CARINATA.

Testâ ovato-conoideâ, carinatâ, tenebroso-olivaceâ; spirâ breviusculâ; suturis parvis; anfractibus senis; aperturâ parvâ, rotundâ, intus albidâ, sulcatâ; columellâ subcrassâ, purpureâ.

Shell ovately conical, carinate, dark olive; spire rather short; sutures small; whorls six; aperture small, round, within whitish, sulcate; columella rather thick, purple.

Hab. Roanoke River, Lafayette. J. A. Warder, M. D. My Cabinet, and Cabinet of Dr. Warder. Diam. .38, Length .52 of an inch.

Remarks.—A single specimen only of this interesting species was sent to me by Dr. Warder. It has some resemblance to *Anculosa dissimilis,* (Say.) It differs in having a smaller and rounder aperture, and in having three *carinæ*, the middle one being the largest. The aperture is rather more than one-third the length of the shell. The carinæ are acute.

ANCULOSA VARIABILIS.

Testâ obtuso-conoideâ, crassâ, vel fasciatâ vel corneâ vel carinatâ vel lævi; suturis linearibus; anfractibus senis, planulatis; aperturâ magnâ, subrotundâ; columellâ crassâ, vel albâ vel purpureâ.

Shell obtusely conical, thick, either banded or horn-coloured, carinate or smooth; sutures linear; whorls six, flattened; aperture large, nearly round; columella thick, white or purple.

Hab. Roanoke River, Lafayette, and near Shenandoah Spring Brook. J. A. Warder, M. D. My Cabinet, and Cabinets of Dr. Warder and T. G. Lea, Cincinnati. Diam. .38, Length .56 of an inch.

Remarks.—Three specimens are before me, all of which differ more or less. Two of them are rather acutely carinate, with a dark epidermis and three rather large bands, the other is of a rather light horn colour with indistinct bands in the interior, and having no carina on the lower whorl. On the columella, there is a slight swelling. The aperture is about one-half the length of the shell.

AMNICOLA. (Gould.)

The genus *Amnicola*, proposed by Dr. Gould, and adopted by Mr. Haldeman, in his table of "Water-breathing Lymniades," is separated from the genus *Paludina; Paludina lustrica*, (Say,) being made the type. There seems to be sufficient reason for this division, as the animal is different, and the operculum subspiral, differing in this respect entirely from that of *Paludina*, which is concentric.

It is difficult in the present state of our knowledge of these small shells to say how many species are known, as the animals and opercula of all the small species of *Paludina* have not yet been observed. *P. limosa* (Say,) and *porata* (Say,) will belong to this genus.*

Amnicola orbiculata.

Testâ orbiculatâ, subtenui, luteolâ, lævi, umbilicatâ; spirâ brevi; suturis valdè impressis; anfractibus quinis, inflatis; aperturâ magnâ, rotundâ.

Shell orbicular, rather thin, yellowish, smooth, umbilicate; spire short; sutures much impressed; whorls five, inflated; aperture large, round.

Hab. Springfield, Ohio. T. G. Lea. Schuylkill? near Philadelphia. My Cabinet, and Cabinet of T. G. Lea. Diam. .18, Length .18 of an inch.

Remarks.—This species is very closely allied to *Am. parva*, and may perhaps prove to be only a variety of it. The specimens before me are all larger, and they appear to be more globose. The aperture is about one-half the length of the shell. I found a single specimen of this species among many small shells which were thrown together in a box, as being collected from our vicinity. It may be possible that it is an Ohio specimen gotten by accident into the box.†

Amnicola parva.

Testâ obtuso-conicâ, subtenui, luteolâ, lævi, umbilicatâ; spirâ brevi; suturis impressis; anfractibus quaternis, inflatis; aperturâ magnâ subrotundâ.

Shell obtusely conical, rather thin, yellowish, smooth, umbilicate; spire short; sutures impressed; whorls four, inflated; aperture large, nearly round.

Hab. Springfield, Ohio. T. G. Lea. My Cabinet, and Cabinet of T. G. Lea. Diam. .15, Length .18 of an inch.

Remarks.—The shell described by Mr. Anthony as *Paludina Cincinnatiensis*, resembles this species, but it is more elevated in the spire, and is a larger shell. It is more nearly allied to *Amnicola orbiculata,* herein described, but may be distinguished by its being a smaller shell, and being less round in the aperture. The base of the lip is disposed to be slightly angular: the aperture is about one-half the length of the shell.

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* The shell described by me in vol. 6, page 22, of the Transactions, as *Paludina pallida*, and previously by Mr. Say as *Melania isogona*, but which I had not before seen, has been carefully examined by my brother T. G. Lea of Cincinnati, as to the form and habits of the animal. There can no longer be any doubt of its belonging to the genus *Amnicola;* it should therefore be called *Amnicola isogona*.

† Since the above was written, I have observed a single specimen of this shell among those in the Academy of Natural Sciences, with the true *porata*, from Cayuga Lake. It is, therefore, probable that it exists in our rivers flowing into the Atlantic.

IO. (Lea.)

The genus *Io* was proposed by me for Mr. Say's *Fusus fluviatilis.* I subsequently added the *spinosa,* which may perhaps prove to be only a variety of the other. The *tenebrosa* now proposed, will make three species of this genus.

Io tenebrosa.

Testâ fusiformi, subtenui, subnigrâ, lævi; spirâ conicâ; suturis vix impressis; anfractibus senis, subplanulatis; aperturâ enormiter pyriformi, intus purpureâ.

Shell fusiform, rather thin, nearly black, smooth; spire conical; sutures scarcely impressed; whorls six, flattened; aperture irregularly pear-shaped, within purple.

Hab. Tennessee. S. M. Edgar. My Cabinet, and Cabinets of Mr. Edgar and Prof. Troost. Diam. .48, Length .75 of an inch.

Remarks.—A single specimen only was brought by Mr. Edgar from Tennessee. It is a small specimen, and may be immature. After a good deal of hesitation, I have determined to give it a place among the species. It seems to me to be very distinct in colour. The channel is more curved to the left and backward, than in Mr. Say's species. It has no trace of spines or tubercles, and is dark all over. I do not know if it ever occurs banded.

Read June 18, 1841.

Helix Mobiliana.

Testâ subglobosâ, rufo-corneâ, nitidâ, perforatâ; spirâ brevi, obtusâ; suturis impressis; anfractibus senis, convexis; aperturâ lunatâ; labro reflexo.

Shell subglobose, reddish horn colour, shining, perforate; spire short, obtuse; sutures impressed; whorls six, convex; aperture lunate; lip reflexed.

Hab. Vicinity of Mobile, Alabama. Mr. Charles Lea. My Cabinet, and Cabinet of T. G. Lea. Diam. .30, Length .25 of an inch.

Remarks.—My brother, T. G. Lea, sent me several of this species, with other *Helices* collected near Mobile. A single specimen only was perfect in the lip, the remainder being immature. It is not easily confounded with any other of our species. In form it is somewhat like *H. jejuna,* (Say,) but is not more than one-fourth the size, and differs in colour. There is rather a deep groove behind the lip, which is reddish. The umbilicus is small.

Helix minutissima.

Testâ subglobosâ, suprà obtuso-conoideâ, subtus convexâ, fusco-corneâ, minutissimè striatâ, umbilicatâ; spirâ brevi; suturis impressis; anfractibus quaternis, rotundis; aperturâ subrotundâ; labro acuto.

Shell subglobose, above obtusely conical, below convex; brown horn colour, very minutely striate, umbilicated; spire short; sutures impressed; whorls four, round; aperture nearly round; lip acute.

Hab. Vicinity of Cincinnati. T. G. Lea. My Cabinet and Cabinet of T. G. Lea. Diam. .06, Length .04 of an inch.

Remarks.—This is the smallest species, in our country, which has come under my notice. Its very minute longitudinal striæ can only be observed by a powerful lens. The umbilicus is rather large and deep. It is nearly the form of *H. labyrinthica*, (Say,) but is a smaller species, is differently striated, and has no teeth. My brother sent me three specimens, which he informs me were found under wet sticks, and on the margin of a pond.

MELANIA TURGIDA.

Testâ lævi, obtuso-conicâ, inflatâ, crassâ, fasciatâ; spirâ brevi, ad apicem acuminatâ; suturis leviter impressis; anfractibus septenis, planulatis; aperturâ parvâ, formam trapezii habente; columellâ incrassatâ, albâ.

Shell smooth, obtusely conical, inflated, thick, banded; spire short, pointed at the apex; sutures slightly impressed; whorls seven, flattened; aperture small, trapezoidal; columella thickened, white.

Hab. Holston River, East Tennessee. Prof. Troost, and S. M. Edgar. My Cabinet, and Cabinets of Prof. Troost and S. M. Edgar. Diam. .35, Length .55 of an inch.

Remarks.—This is a very short and thick species, having a very large body whorl disposed to be obtusely angular at the middle. The number of bands varies. One of the specimens has a single one, another has two bands, and five have five bands, there being seven specimens before me. That with a single band is of a bright yellow; the others are of a greenish yellow. The aperture is nearly one-half the length of the shell, and twisted at the base.

MELANIA GLABRA.

Testâ lævi, conoideâ, subtenui, nitidâ, tenebroso-castaneâ; spirâ subelevatâ; suturis leviter impressis; anfractibus subplanulatis; aperturâ elongatâ, formam trapezii habente, intus purpureâ; columellâ incurvâ.

Shell smooth, conical, rather thin, shining, dark chestnut colour; spire rather elevated; sutures slightly impressed; whorls rather flattened; aperture elongated, trapezoidal, purplish within, columella incurved.

Hab. Holston River, East Tennessee. Prof. Troost, and S. M. Edgar. My Cabinet, and Cabinets of Prof. Troost and Mr. Edgar. Diam. .32, Length .70 of an inch.

Remarks.—The apex in all the specimens before me is slightly eroded, and therefore the number of the whorls cannot be accurately ascertained; it may be six or seven. The aperture is more than one-third the length of the shell. The superior whorls are disposed to be carinate, and below the sutures the colour is lighter. The columella is much incurved. Within the aperture, indistinct confluent bands may be observed. These are scarcely observable without, but give the shell a very dark aspect, somewhat like *M. rufa*, (nobis.) It is very different, however, in form, from that species.

MELANIA PERFUSCA.

Testâ lævi, conoideâ, subcrassâ, tenebroso-fuscâ; spirâ exsertâ; suturis linearibus; anfractibus subplanulatis; aperturâ grandi, inflatâ, ovatâ, intus pallido-purpureâ.

Shell smooth, conical, rather thick, dark brown; spire exserted; sutures linear; whorls rather flattened; aperture large, inflated, ovate, within pale purple.

Hab. Calf-killer Creek. Tennessee. S. M. Edgar. My Cabinet and Cabinet of Mr. Edgar. Diam. .50, Length 1 inch.

Remarks.—A single specimen, with the spire truncate, is before me. The lower portion is perfect. The apex being destroyed, the number of whorls cannot be ascertained.

The aperture is, I presume, rather more than one-third the length of the shell. The lower part of the margin protrudes considerably. It seems to be nearly allied to *M. ebenum*, (nobis,) but is a larger shell, more inflated, and has a larger aperture, being less elliptical.

MELANIA PICTA.

Testâ lævi, obtuso-conicâ, crassâ, subfusiformi, subviridi, fasciatâ; spirâ subelevatâ; suturis impressis, supernè exaratis; anfractibus octonis, planulatis; aperturâ elongatâ, formam trapezii habente; columellâ incurvâ.

Shell smooth, obtusely conical, thick, subfusiform, greenish, banded; spire rather elevated; sutures impressed, above furrowed; whorls eight, flattened; aperture elongated, trapezoidal; columella incurved.

Hab. Holston River, East Tennessee. Prof. Troost, and S. M. Edgar. My Cabinet, and Cabinets of Prof. Troost and S. M. Edgar. Diam. .30, Length .70 of an inch.

Remarks.—The four specimens before me have each three bands, which with the yellowish tint below the sutures give the shell a lively appearance. The superior whorls are disposed to be bicarinate, and the lower carina being covered with the whorl below, causes a furrow along the suture. The aperture is more than one-third the length of the shell, angular at the base, with rather a large sinus.

MELANIA IMPRESSA.

Testâ transversè et crebrissimè sulcatâ, fusiformi, crassâ, rufo-fuscâ; spirâ obtusâ; suturis impressis; anfractibus senis, planulatis; aperturâ ellipticâ, subgrandi, ad basim angulatâ, intus albâ.

Shell transversely and thickly sulcate, fusiform, thick, reddish brown; spire obtuse; sutures impressed; whorls six, flattened; aperture elliptical, rather large, angular at the base, within white.

Hab. Coosa River, Alabama. Dr. Brumby. My Cabinet, and Cabinets of Dr. Griffith, Dr. Foreman, and Mr. J. Clark, of Cincinnati. Diam. .48, Length .81 of an inch.

Remarks.—Dr. Griffith received a single specimen only of this singularly marked species, and this is not entirely perfect at the spire or aperture. The whole surface of this specimen is covered with very minute impressed revolving lines, the body whorl having twenty-four. They are nearly equidistant and very regular. Its aperture is nearly one-half the length of the shell. On the superior part of the columella, there is quite a large callus.* In form and size, it closely resembles the *M. robusta*, herein described.

MELANIA ROBUSTA.

Testâ striatâ, fusiformi, crassâ, luteolâ; spirâ obtusâ; suturis subimpressis; anfractibus senis, subconvexis; aperturâ ellipticâ, magnâ, ad basim angulatâ, intus albâ.

Shell striate, fusiform, thick, yellowish; spire obtuse; sutures rather impressed; whorls six, rather convex; aperture elliptical, large, angular at the base, within white.

Hab. Coosa River, Alabama. Dr. Brumby. My Cabinet, and Cabinets of Dr. Griffith, Dr. Foreman, and Mr. J. Clark. Diam. .60, Length .91 of an inch.

Remarks.—A single specimen, only, of this fine species was obtained by Dr. Griffith. It presents four rather distant large revolving striæ on the body whorl, and two on the next. In other specimens these may be found more numerous, or entirely wanting. The aperture is nearly half the length of the shell.† In form and size, it very closely agrees with *M. impressa*, herein described.

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* Other specimens subsequently received, confirm nearly all the other characters.

† In specimens subsequently received, the striæ were found to differ but little.

MELANIA JAYANA.

Testâ tuberculatâ, subfusiformi, crassâ, pallido-corneâ; spirâ exsertâ; suturis linearibus, curvatis; anfractibus subconvexis, medio impressis, tuberculorum duplici serie cinctis; columellâ incurvatâ, supernè incrassatâ; aperturâ formam trapezii habente, intus albidâ.

Shell tuberculate, subfusiform, thick, pale horn colour; spire exserted; sutures linear and curved; whorls rather convex, impressed in the middle, surrounded by a double series of tubercles; columella incurved, thickened above; aperture trapezoidal, whitish within.

Hab. Cany Fork. De Kalb county, Tennessee. Prof. Troost. My Cabinet, and Cabinets of Dr. Jay and Prof. Troost. Diam. .78, Length 1.20 of an inch.

Remarks.—Dr. Jay had two specimens of this species, and I owe to his kindness the possession of one of them. It very closely resembles the *M. armigera,* (Say,) in most of its characters, but may at once be distinguished by the double row of tubercles, the *armigera* never possessing distinctly more than one row: below the sutures, however, there are sometimes imperfect tubercles, which are caused by the protrusion of the tubercles of the superior whorl. This protrusion also takes place in the *Jayana,* but causes in it only a constant curvature in the linear suture.

The apex of the specimen is much eroded, and consequently I am not sure of the number of the whorls, probably eight or nine. The aperture may be rather more than one-third the length of the shell, and is acutely angular at the base, with rather a deep sinus. The callus above causes a considerable sinus there. The operculum is dark brown, the radii converging at the lower interior edge.

ANCULOSA RUBIGINOSA.

Testâ ovato-gibbosâ, crassâ, lævi, rubiginosâ; spirâ subelevatâ; suturis impressis; anfractibus planulatis; aperturâ enormiter ovatâ, intus albidâ; columellâ crassâ, tenebroso-purpureâ.

Shell ovately gibbous, thick, smooth, rusty colour; spire rather elevated; sutures impressed; whorls flattened; aperture irregularly ovate, within whitish; columella thick, dark purple.

Hab. Warrior River, Alabama. Dr. Brumby. My Cabinet, and Cabinets of Dr. Griffith, Dr. Foreman, and Mr. Clark. Diam. .40, Length .60 of an inch.

Remarks.—A single, and not a very perfect specimen is before me. The middle of the whorl is flattened, indeed a little impressed, and this causes a curve in the outer lip. It is obscurely banded, and the whole of the columella is purple. The aperture is nearly two-thirds the length of the shell. The spire is more exserted than usual in the *Anculosæ,* but not perfect in this specimen. Four whorls are perceptible.*

ANCULOSA GRIFFITHIANA.

Testâ ovato-gibbosâ, crassâ, crebrè et transversè striatâ, fasciatâ; suturis impressis; anfractibus quaternis, planulatis; aperturâ ovatâ, intus fasciatâ; columellâ crassâ, tenebroso-purpureâ.

Shell ovately gibbous, thick, closely and transversely striate, banded; sutures impressed; whorls four, flattened; aperture ovate, within banded; columella thick, dark-purple.

Hab. Coosa River, Alabama. Dr. Brumby. My Cabinet, and Cabinets of Dr. Griffith, Dr. Foreman, and Mr. J. Clark. Diam. .50, Length .60 of an inch.

Remarks.—The distinctive characters of this species, are the transverse striæ and the flattened side. This flatness causes an obtuse angle below, and one above. One of the two specimens, under examination, is more banded, and has a less number of striæ than the other. The aperture is nearly three-fourths the length of the shell.

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* Several very fine specimens have been since received, from Dr. Foreman.

ANCULOSA TUBERCULATA.

Testâ ovatâ, crassâ, supernè, tuberculatâ, fuscâ; spirâ brevi; suturis vix impressis; anfractibus subconvexis; aperturâ ovatâ, intus carneâ; columellâ crassâ, maculatâ.

Shell ovate, thick, above tuberculate, brown; spire short; sutures scarcely impressed; whorls slightly convex; aperture ovate, within flesh-coloured; columella thick and spotted.

Hab. Warrior River, Alabama. Dr. Brumby. Cabinet of Dr. Griffith. Diam. .38, Length .50 of an inch.

Remarks.—The above description is made from a single specimen, which is truncate at the apex, as the species of this genus usually are. Three whorls are visible. In a perfect state, it probably has four. The specimen before me has two rows of tubercles. On the superior part of the whorl, and below these, are two parallel indistinct lines, which may, in other individuals, rise into tubercles. In the interior, two purple bands are visible. On the middle of the columella there is a large purple spot. This may not occur in all specimens. The aperture is about two-thirds the length of the shell.

VALVATA BICARINATA.

Testâ orbiculari, supernè planulatâ, bicarinatâ, subcrassâ, supernè corneâ, infernè albidâ, latè umbilicatâ; suturis impressis; spirâ depressâ; anfractibus quaternis, convexis; aperturâ rotundâ, intus albidâ.

Shell orbicular, flattened above, bicarinate, rather thick, horn-coloured above, whitish below, widely umbilicate; sutures impressed; spire depressed; whorls four, convex; aperture rounded, whitish within.

Animal.—Body rather short and white, head large, tapering, slightly enlarged at the anterior termination, with a black mark passing from the neck between the eyes, tapering off and reaching nearly to the end of the snout, where there are two oblique black marks bordered in front by white, and accompanied behind by several irregular white spots, the anterior ones being the larger. Branchia translucent, superior portion blackish, bordered with white spots and occasionally obtruded; eyes round and deep black, placed at the posterior base of the tentacula, surrounded by a white area; tentacula long, rather tapering, obtuse at the end; filament rather short, translucent with longitudinal white lines; foot wide and furcate anteriorly, where minute white spots may be observed. Operculum thin, semitransparent, light horn colour, increment circular and rather coarse.

Hab. Schuylkill River, west side, below Permanent Bridge. H. C. Lea. My Cabinet. Diam. .30, Length .12 of an inch.

Remarks.—In the form of the shell, this species closely resembles the *tricarinata*, (Say.) It differs in having but two carinæ, in having a wider umbilicus, and the spire is more depressed. The animals of the two species differ in form and colour more than the shells.

The head of the *tricarinata* is more cylindrical and enlarged at the termination, where it somewhat resembles the snout of the hog, while that of the *bicarinata* is more conical and without so sudden an enlargement at the end. The colour of the *bicarinata* is lighter. In the black markings they also differ. In the *tricarinata* there is a single blotch anterior to the area between the eyes. In the *bicarinata* this extends also behind this area; and in addition may be observed two quite black marks above the mouth, which the *tricarinata* does not seem to have. The tentacula of the *bicarinata* are larger and more filiform. When in motion, the anterior portions of the lobes of the foot are pointed, and recurved or hooked.

The shell of the *bicarinata* is quite light-coloured beneath, and rather a dark horn colour above, the change of colour taking place a short distance above the periphery of the whorl, between which and the superior carina it is quite dark. The superior carina is large and erect, the inferior one is smaller. All the whorls are visible beneath. Very minute longitudinal striæ cover the whole surface.

Having several living specimens of both these species, I observed them closely with a lens while under water in a glass vessel. On the 15th of May, while I had a *tricarinata* at the focus of my lens, I observed a small apple green, globose object, passing from under the aperture of the shell. This was shortly followed by others, and soon a transparent gelatinous mass became visible. This mass was passed slowly over the right side of the neck, under the pectiniform moveable branchiæ, until entirely discharged against the perpendicular side of the vessel in which it was kept, and there the mass remained attached, the parent having abandoned it immediately. The time was fifteen minutes from the first appearance of the mass until it was fairly discharged. The green globules were the ova, of which I counted thirty in the transparent, globose gelatinous mass, which was not more in diameter than one-twentieth of an inch, the transverse diameter of the shell being about four-twentieths of an inch. In other cases, I found the number of ova to differ; some masses having only ten or twelve.

On the 23d, (eight days after) the ova were so far advanced, as to be changed to a dull faded green, the mass enveloping them having changed by degrees in transparency, and becoming of a slightly ferruginous colour. As yet, no change of bulk or arrangement was observed.

On the 29th, (fourteen days after,) the mass was observed to be opened, and with a lens of considerable power I could plainly see a motion in most of the ova, the rounded form of the shell being easily discerned within.

On the 30th, (fifteen days after) most of the young shells had broken their filmy bonds, only six or seven remaining: their motion was very apparent, and their minute black eyes could be plainly seen. I observed to-day, for the first time, that the *valvata* had the power of swimming, inverted from the surface of the water, like the *Planorbes*, *Physæ*, &c. Most of the young were in that position, and could move comparatively fast. The action of the mouth in the adult, when swimming in this way, was constant, and changed from an oval to a circular form.

From the above observations, we may conclude that the *valvata tricarinata* requires from fourteen to fifteen days to be perfected in the ovum, from the time it is ejected and abandoned by its parent. The *bicarinata*, I have no doubt, requires the same time. Numerous globules were deposited about the glass, which globules appeared all to resemble each other, and nearly all the individuals were of the species *bicarinata*.

PALUDINA ANGULATA.

Testâ inflatâ, tenui, fuscâ, supernè subvaricosâ, infernè transversè et minutè striatâ, minutè perforatâ; spirâ breviusculâ, ad apicem tenebrosâ; suturis impressis; anfractibus quinis, in medio angulatis; aperturâ magnâ, subtriangulatâ, intus subrubiginosâ.

Shell inflated, thin, brown, above somewhat varicose, below transversely and minutely striate, minutely perforate; spire rather short, dark at the apex; sutures impressed; whorls five, angular in the middle; aperture large, subtriangular, within subrubiginous.

Hab. Coosa River, Alabama. Dr. Brumby. My Cabinet, and Cabinets of Dr. Griffith, Dr. Jay, Dr. Foreman, T. G. Lea, and J. Clark. Diam. .80, Length 1.05 of an inch.

Remarks.—This is a very distinct species, being more angular than any I have seen. In the specimen before me, there are three irregular transverse impressions, two above the angle, and one immediately below. The striæ are more distinct on the lower half of the whorl. The first three whorls are very dark. The aperture is nearly one-half the length of the shell, and quite angular at the base.*

PALUDINA COOSAENSIS.

Testâ subglobosâ, tenui, pallidâ, sublævi, perforatâ; spirâ brevi; suturis valdè impressis; anfractibus quinis, rotundatis; aperturâ magnâ, subrotundâ, intus albidâ.

Shell subglobose, thin, pale, rather smooth, perforate; spire short; sutures very much impressed; whorls five, round; aperture large, nearly round, within whitish.

Hab. Coosa River, Alabama. Dr. Brumby. My Cabinet, and Cabinets of Dr. Griffith and Dr. Foreman. Diam. .58, Length .62 of an inch.

Remarks.—This species is remarkable for its round whorls, its width and large deep sutures. The superior part of the whorls is somewhat flattened. The colour is remarkably pale, nearly white. The epidermis is very thin, and under the lens displays very minute, rather regular longitudinal striæ crossed on the body whorl by obsolete striæ. The aperture is nearly one-half the length of the shell.

PALUDINA CYCLOSTOMATIFORMIS.

Testâ subcylindraceâ, subcrassâ, pallido-corneâ, lævi, perforatâ; spirâ exsertâ, ad apicem roseâ, obtusâ; suturis valdè impressis; anfractibus quinis, rotundatis; aperturâ parvâ, subrotundâ, intus salmonis colore tinctâ.

Shell subcylindrical, rather thick, pale horn colour, smooth, imperforate; spire exserted, at the apex rose-coloured and obtuse; sutures very much impressed; whorls five, rounded; aperture small, nearly round, within salmon-coloured.

Hab. Coosa River, Alabama. Dr. Brumby. My Cabinet, and Cabinets of Dr. Griffith, Dr. Jay, L. W. Sloat, and Dr. Foreman. Diam. .32, Length .82 of an inch.

Remarks.—This is a very remarkable species assuming very much the form of an exserted *Cyclostoma.* A single, somewhat worn specimen only, was received. The aperture is rather more than one-third the length of the shell. Its subcylindrical form is very remarkable.†

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* Since the above was written, I have received more mature and perfect specimens. They differ from the one described in being darker in the epidermis, and in having four purple broad bands, which are very distinct within the aperture. In these specimens, there is a series of indistinct tubercles above the periphery of the last whorl.

† Since the above description was written, Dr. Jay and Dr. Foreman have placed in my hands specimens from the same locality. The epidermis is perfect, and they are of a greenish horn colour. The interior of the aperture is bluish, while the apex is slightly salmon-coloured.

Read December 16, 1842.

In a paper which I read before this society, in January of last year, I added fifty-seven new species to the genus *Melania*, and in a subsequent paper, several more were added. Recently Dr. E. Foreman, of Baltimore, very kindly sent to me all the specimens from his cabinet, of the family *Melaniana* and *Peristomiana*, with permission to describe what I might find new. There appeared to me to be twelve undescribed *Melaniæ*, four *Anculosæ* and two *Paludinæ*. These I have described in this paper. In my former memoir, I stated that Lamarck does not mention a single species of *Melania* as inhabiting the rivers of Europe, but since the publication of his great work, Dr. Philippi and some other zoologists, have described a few species from Italy and the Eastern parts of Europe.

The genus *Melania* is greatly developed in the United States, while not a single species has been observed in Great Britain or the western part of the continent. When Lamarck issued his 6th vol. in 1822, he was acquainted with only sixteen recent species, nearly all of which, he says, are exotic to Europe. Since that period our knowledge of this genus has greatly extended, and my catalogue now includes the names of two hundred and sixty-six species. This does not include the *Anculosæ*, which Mr. Say very properly separated from the *Melaniæ*. My catalogue of these embraces thirty-three species.

Of the two hundred and sixty-six* species of the genus *Melaniæ*, forty-four† are in a fossil state, leaving two hundred and twenty-two recent. Of these sixty-one are exotic, and one hundred and sixty-one indigenous. Eighty-eight of these are described in my papers, including the present one, presented to this society.

It is remarkable, that while such a vast development of this genus has taken place here, that as yet we have not observed a single species of the nearly allied genus *Melanopsis* in North America. It ranges in a variety of species from the Caucasus to the Alps. I have in my cabinet three supposed species from South America. One of these, the *crenocarina* of Moricand (a very interesting shell) will, I think, have to be removed to a new genus. The *Braziliensis* of the same author approximates more closely to Lamarck's characteristics, but the callus is absent; and the same remark applies to the *maculata*, (nobis.‡)

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* Of these there may be probably twelve or fifteen duplications.

† For many years I have believed that many of Lamarck's fossil *Melaniæ* belonged to other genera, and I find that M. Deshayes, in his notes to the new edition of Lamarck, mentions six as certainly not *Melaniæ*.

‡ Having inadvertently in my former papers duplicated some names, I propose the following changes, *Melania plicatula* to *M. Deshayesiana*, that name being preoccupied by Deshayes. *Melania plicata*, to *M. Menkiana*, that name being preoccupied by Dr. Menke. *Melania exarata*, to *M. arata*, that name being preoccupied by Dr. Menke. *Planorbis lens* to *P. Brogniartiana*, that name being preoccupied by M. A. Brogniart.

MELANIA VANUXEMIANA.*

Testâ striatâ, obtuso-conicâ, solidâ, luteolâ, fasciatâ; spirâ breviusculâ; suturis impressis; anfractibus senis, subconvexis; columellâ supernè incrassatâ; aperturâ ovatâ, albâ.

Shell striate, obtusely conical, solid, yellowish, banded; spire rather short; sutures impressed; whorls six, somewhat convex; columella thickened above; aperture ovate, white.

Hab. Alabama. E. Foreman, M. D. Cabinet of Dr. Foreman. Diam. .42, Length, .73 of an inch.

Remarks.—A very pretty symmetrical species, having the mouth rather more than one-third the length of the shell. A single specimen only is before me. It has five nearly equidistant coarse striæ, and four purple bands. It is somewhat like *M. ovalis*, herein described, but has a wider aperture, and a higher spire. I name it after my friend, Prof. Vanuxem.

MELANIA OVALIS.

Testâ striatâ, fusiformi, solidâ, luteâ, fasciatâ; suturis valdè impressis; anfractibus senis, subconvexis; aperturâ ovatâ, constrictâ, intus albidâ.

Shell striate, fusiform, solid, yellow, banded; sutures much impressed; whorls six, rather convex; aperture oval, narrow, whitish within.

Hab. Alabama. E. Foreman, M. D. My Cabinet, and Cabinets of Dr. Foreman, T. G. Lea, and J. Clark. Diam. .40, Length .62 of an inch.

Remarks.—A number of specimens were kindly sent by Dr. Foreman for my inspection, several of which are young, exhibiting on the first two or three whorls very distinct folds. Those of the larger specimens are worn off. The mature specimens are remarkable for their irregularly elliptical form, generally having transverse striæ over the whole surface. The aperture is very regularly ovate, fully the half of the length of the shell.

MELANIA HAYSIANA.

Testâ striatâ, subcylindraceâ, solidâ, luteo-fuscâ; spirâ subelevatâ; suturis impressis; anfractibus planulatis; aperturâ parvâ, ellipticâ.

Shell striate, subcylindrical, solid, yellowish brown; spire rather elevated; sutures impressed; whorls flattened; aperture small, elliptical.

Hab. Alabama. E. Foreman, M. D. My Cabinet, and Cabinets of Dr. Foreman, T. G. Lea, and J. Clark. Diam. .43, Length .90 of an inch.

Remarks.—Dr. Foreman submitted many specimens of this species to my examination, and I find them differing very much in form and colour. Some individuals are so full of dark purple bands as to give them a dark hue; others are devoid of bands entirely, and are yellowish. The aperture is contracted, and about one-third the length of the shell. The transverse raised striæ, in some, cover nearly all the whorls, while others are almost or entirely free from them. In general outline it is allied to *M. picta*, (nobis,) all the specimens being more or less eroded at the beaks. I am unable to state the number of whorls, but believe them to be eight or nine. I dedicate this species to my friend Isaac Hays, M. D.

MELANIA EXCISA.

Testâ striatâ, subfusiformi, subcrassâ, luteolâ; spirâ ovato-conicâ; suturis impressis; anfractibus planulatis; aperturâ supernè excisâ, parvâ, ellipticâ, albâ.

Shell striate, subfusiform, rather thick, yellowish; spire ovately conical; sutures impressed; whorls flattened; aperture cut out above, small, elliptical, white.

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* In this paper I adopt the rules of construction laid down in botanical nomenclature, (see Linley's Elements,) where it is usual, when species are named after individuals who discover them, to use the genitive; when in compliment, the adjective.

Hab. Alabama. E. Foreman, M. D. My Cabinet, and Cabinets of Dr. Foreman, T. G. Lea, and J. Clark. Diam. .40, Length .64 of an inch.

Remarks.—This shell is very remarkable for the cut in the superior part of the outer lip, very similar to some species of *Pleurotoma*. This cut extends nearly one-fifth round the whorl, leaving immediately below the suture an elevated ridge. There are nearly three whorls of this specimen perfect, and the cicatrix shows the cut to have extended in due proportion thus far. The aperture is rather small, and rather more than one-third the length of the shell. On the spire there is a slight disposition to plication. The apex being eroded, the number of whorls is not certain, perhaps six. This specimen has three revolving purple bands.

For the first time we now observe in the *Melaniana* a species with a pleurotomose lip. In all its other characters it is a true *Melania*, resembling most, perhaps, *M. Vanuxemiana*, herein described. A character so anomalous in this family, caused me to doubt the propriety of retaining it here. But the absence of the animal, and the fact that I have before me a new species, with the other characteristics of the genus *Anculosa*, having in a minor degree this pleurotomose character, induces me merely to propose a name provisionally for it. The animal may be on examination different; should it prove so, it may then be called *Schizostoma*, Σχίζω, to cut, Στόμα, a mouth.

Under the microscope may be observed, in this species, very minute undulating revolving striæ.

MELANIA ORDIANA.

Testâ striatâ, pyramidatâ, crassâ, tenebroso-fuscâ; spirâ exsertâ; suturis valdè impressis; anfractibus planulatis; aperturâ formam rhombi habente, parvâ, albidâ.

Shell striate, pyramidal, thick, dark brown; spire drawn out; sutures deeply impressed; whorls flattened; aperture rhombic, small, whitish.

Hab. Alabama. E. Foreman, M. D. My Cabinet, and Cabinets of Dr. Foreman, T. G. Lea, and J. Clark. Diam. .52, Length 1.25 of an inch.

Remarks.—A single specimen only of this species is before me, and that unfortunately is decollate, in having lost, probably, four or five whorls: the four lower whorls are perfect. The outer lip is much curved, giving the aperture an auger-like appearance, and causing the channel to be much impressed. On the body whorl there are four rather distant elevated striæ, three of which are large: the whorls above exhibit two. The aperture is about one-fourth the length of the shell. This species resembles *M. canaliculata*, (Say,) and *M. annulifera*, (Con.) It has not the channel of the former, and differs from the latter, in having deeply impressed sutures in the form of the aperture, in the outer lip, and in the striæ. I dedicate it to my old friend, George Ord, Esq.

MELANIA BREVIS.

Testâ striatâ, subcylindraceâ, subsolidâ, luteâ; spirâ breviusculâ; suturis impressis; anfractibus planulatis; columellâ supernè incrassatâ; aperturâ ovatâ, albâ.

Shell striate, subcylindrical, somewhat solid, yellow; spire rather short; sutures impressed; whorls flattened; columella thickened above; aperture ovate, white.

Hab. Alabama. E. Foreman, M. D. Cabinet of Dr. Foreman. Diam. .41, Length .60 of an inch.

Remarks.—A single specimen only of this species is before me. The apex being eroded, the number of whorls cannot with certainty be ascertained: there appear to be about five. On this specimen, there are eight indistinct impressed striæ, and several low, irregular folds on the body whorl, which may be more distinct on the superior whorls when found perfect. The aperture is about half the length of the shell.

MELANIA OLIVA.

Testâ striatâ, ellipticâ, solidâ, fuscâ; spirâ breviusculâ; suturis valdè impressis; anfractibus convexis; columellâ incurvatâ, supernè incrassatâ; aperturâ ovata, albâ.

Shell striate, elliptical, solid, brown; spire rather short; sutures much impressed; whorls convex; columella incurved, thickened above; aperture ovate, white.

Hab. Alabama. E. Foreman, M. D. My Cabinet, and Cabinet of Dr. Foreman. Diam. .50, Length 1 inch.

Remarks.—This is a ponderous and rather large species, with not very distinct striæ on the few specimens before me. The superior part of the columella is quite callous. The apex of each is too much eroded to designate the number of the whorls. The aperture is rather small, and contracted. One of the specimens is rather coarsely plicate.

MELANIA FOREMANI.

Testâ tuberculatâ, pyramidatâ, subcrassâ, luteo-fuscâ; spirâ elevatâ; suturis enormiter lineatis; anfractibus novenis, planulatis; aperturâ productâ, ad basim angulata et canaliculatâ, intus albidâ.

Shell tuberculate, pyramidal, rather thick, yellowish brown; spire elevated; sutures irregularly lined; whorls nine, flattened; aperture elongated, angular and channelled at the base, within whitish.

Hab. Alabama. E. Foreman, M. D. My Cabinet, and Cabinets of Dr. Foreman, T. G. Lea, and J. Clark. Diam. .52, Length 1.28 of an inch.

Remarks.—A fine, large, symmetrical species, furnished with a row of closely set tubercles on the middle of the whorl, and several irregular transverse striæ disposed to be tuberculate. The seven or eight specimens before me are very similar, differing but little in form or colour. The oldest one is rather browner. It is remarkable for its regular pyramidal form. The aperture is contracted, and rather more than one-third the length of the shell. I have great pleasure in dedicating it to Dr. Foreman, to whose kindness I owe the specimen in my cabinet.

MELANIA TORQUATA.

Testâ tuberculatâ, subfusiformi, nitidâ, subtenui, luteâ; spirâ subelevatâ; suturis impressis; anfractibus septenis, subconvexis; aperturâ productâ, ad basim angulatâ, intus albida.

Shell tuberculate, subfusiform, shining, rather thin, yellow; spire rather elevated; sutures impressed; whorls seven, somewhat convex; aperture elongated, angular at the base, within whitish.

Hab. Tennessee. E. Foreman, M. D. My Cabinet. Diam. .42, Length .80 of an inch.

Remarks.—This is a very beautiful species, of which I have only one specimen before me. The necklace-like row, (hence its name,) of small closely set tubercles, gives it an attractive appearance. Each successive whorl covers up these tubercles as well as several striæ below them, leaving the whole spire smooth. The aperture is rather contracted, and nearly half the length of the shell. The outer lip is sharp, and very much curved. It has some resemblance to *M. alveare,* (Con.) but is a larger shell, less solid, and more fusiform.

MELANIA PRODUCTA.

Testâ plicatâ, subfusiformi, subtenui, corneâ; spirâ obtuso-conicâ; suturis impressis; anfractibus octonis, planulatis; aperturâ ellipticâ, albidâ.

Shell folded, subfusiform, rather thin, horn-coloured; spire obtusely conical; sutures impressed; whorls eight, flattened; aperture elliptical, whitish.

Hab. Tennessee. E. Foreman, M. D. My Cabinet, and Cabinet of Dr. Foreman. Diam. .57, Length .70 of an inch.

Remarks.—This species has rather distant folds on the first six whorls, and a disposition to tuberculation on the middle of the lower whorl, the superior part being disposed to be striate. The base of the columella is twisted, and the channel well impressed. The aperture is quite one-half the length of the shell.

MELANIA CURVATA.

Testâ obtuso-carinatâ, subpyramidatâ, subcrassâ, tenebroso-corneâ; spirâ subelevatâ; suturis impressis; anfractibus octonis, convexis; aperturâ parvâ, curvatâ, albidâ.

Shell obtusely carinate, somewhat pyramidal, rather thick, dark horn colour; spire somewhat elevated; sutures impressed; whorls eight, convex; aperture small, curved, whitish.

Hab. Tennessee. E. Foreman, M. D. My Cabinet, and Cabinet of Dr. Foreman. Diam. .40, Length .73 of an inch.

Remarks.—The two specimens before me vary very little in all their characters. This is a very distinct species, resembling more, perhaps, *M. conica* (Say) than any other. The whorls are close, and about the middle are placed two or three obscure carinæ, which cause a slightly impressed channel. The aperture is small, being a little more than one-third the length of the shell. The outer lip is sharp and very much curved, causing the base of the columella to be twisted. In one of the specimens an obscure band near the base in the interior may be observed.

MELANIA EXPANSA.

Testâ lævi, subfusiformi, subcrassâ, luteolâ; spirâ obtuso-conicâ; suturis subimpressis; anfractibus quinis, subconvexis; aperturâ magnâ, expansâ, albidâ.

Shell smooth, somewhat fusiform, rather thick, yellowish; spire obtusely conical; sutures somewhat impressed; whorls five, slightly convex; aperture large, expanded, whitish.

Hab. Alabama. E. Foreman, M. D. Cabinet of Dr. Foreman. Diam. .43, Length .63 of an inch.

Remarks.—A solitary specimen of this was among the shells sent by Dr. Foreman. In form it resembles *M. variabilis*, (nobis,) but may be distinguished from that species in being larger, and having a larger proportionate aperture, which is more expanded. The aperture is full one-half the length of the shell. The specimen under examination has four bands, and the yellow epidermis is nearly covered with a deposite of the oxide of iron.

ANCULOSA INCISA.

Testâ lævi, ovato-gibbosâ, crassâ, luteo-fuscâ; spirâ brevis; anfractibus quaternis, planulatis; columellâ supernè incrassatâ; aperturâ magnâ, ovatâ, albâ.

Shell smooth, ovately gibbous, thick, yellowish brown; spire short; whorls four, flattened; columella thickened above; aperture large, ovate, white.

Hab. Alabama. E. Foreman, M. D. My Cabinet, and Cabinets of Dr. Foreman, T. G. Lea, and J. Clark. Diam. .44, Length .64 of an inch.

Remarks.—Four individuals of this species are before me, and all of them have, though in a less degree, the remarkable pleurotomose character, described in the remarks on *Melania excisa*, page 25.

The observations there made in regard to the genus, may in part be referred to for this shell. It might be supposed, that this cut could be caused by a fracture in the shell, or injury to the animal. But this is by no means the case. On the contrary, in one of the individuals where a fracture took place by the breaking off of the middle of the lip, this was subsequently replaced, and the curved edge reinstated as before. This species resembles in form *Anculosa Foremani*, herein described; but the spire is more exserted. All the four specimens have three brown bands more or less distinct, and the callus on the superior part of the columella is slightly maculate with brown. The aperture is about two-thirds the length of the shell.

ANCULOSA FOREMANI.

Testâ lævi, ovato-gibbosâ, crassâ, luteâ, transversè lineatâ; spirâ brevissimâ; suturis impressis; anfractibus subplanulatis; columellâ percrassâ, aperturâ submagnâ, ellipticâ, albidâ.

Shell smooth, ovately gibbous, thick, yellow, transversely lined; spire very short; sutures impressed; whorls somewhat flattened; columella very thick; aperture rather large, elliptical, whitish.

Hab. Alabama. E. Foreman, M. D. My Cabinet, and Cabinet of Dr. Foreman. Diam. .40, Length .50 of an inch.

Remarks.—Two of the three specimens under examination have very distinct, capillary, revolving, deep brown lines between the top of the aperture and the base. Above that the space is nearly filled up with two indistinct, interrupted lines which give a clouded appearance to that portion of the shell. The third specimen is of a brighter yellow with all the lines nearly obliterated. In form this species very closely resembles *An. flammata* herein described, but the capillary lines distinguish it at once, and the columella is thicker at the base. In all the three specimens a slight tinge of brown may be distinguished on the middle of the columella. I dedicate the species to Dr. Foreman, who kindly placed a specimen in my cabinet.

ANCULOSA SOLIDA.

Testâ lævi, ellipticâ, subcrassâ, luteo-fuscâ; spirâ exsertâ; suturis impressis; anfractibus planulatis; columellâ incurvatâ, supernè et infernè incrassatâ; aperturâ elongatâ, ellipticâ, albâ.

Shell smooth, elliptical, rather thick, yellowish brown; spire somewhat drawn out; sutures impressed; whorls flattened; columella incurved, thickened above and below; aperture elongated, elliptical, white.

Hab. Alabama. E. Foreman, M. D. My Cabinet, and Cabinet of Dr. Foreman. Diam. .38, Length .60 of an inch.

Remarks.—Three specimens only were sent to me by Dr. Foreman. They differ very little from each other, except that one exhibits a few indistinct elevated revolving striæ. Other specimens may present this character more strongly. Neither of the specimens have a perfect spire, the apices being eroded. The number of whorls I should think, however, were five. The aperture seems to be rather more than half the length of the shell. The columella is remarkable for its callus near the base as well as having another above.

ANCULOSA FLAMMATA.

Testâ lævi, ovato-gibbosâ, crassâ, luteolâ, obliquè flammatâ; spirâ brevissimâ; suturis impressis; anfractibus subplanulatis; columellâ supernè percrassâ; aperturâ submagnâ, ellipticâ, albidâ.

Shell smooth, ovately gibbous, thick, yellowish, obliquely flammulate; spire very short; sutures impressed; whorls somewhat flattened; columella very thick above; aperture rather large, elliptical, whitish.

Hab. Alabama. E. Foreman, M. D. Cabinet of Dr. Foreman. Diam. .38, Length .49 of an inch.

Remarks.—A single specimen, broken on the outer lip, is before me. The middle of the whorl is slightly flattened. The spire is eroded, and little more than one whorl is presented. The epidermis on this part is nearly perfect, and exhibits a fine yellow ground with thickly set, oblique, flammulate, brown bands. This species is very distinct from any I know, not being aware that flammulate bands have been before observed in any of this genus. In a single species of *Melania*, somewhat similar bands exist, the *M. breviformis* (Pareyss,) from New Holland.

PALUDINA INCRASSATA.

Testâ lævi, ellipticâ, subtenui, imperforatâ, tenebroso-corneâ; suturis subimpressis; anfractibus subconvexis; columellâ supernè incrassatâ; aperturâ subrotundatâ, parvâ, intus cæruleâ.

Shell smooth, elliptical, rather thin, imperforate, dark horn colour; sutures somewhat impressed; whorls somewhat convex; columella thickened above; aperture rather round, small, within bluish.

Hab. Alabama. E. Foreman, M. D. Cabinet of Dr. Foreman. Diam. .52, Length . . . of an inch.

Remarks.—Rather more than the first whorl only of the specimen before me is perfect, and I would not have proposed it for a new species, but that this part differs from any which has come under my notice. The callus on the superior part of the columella is very like that we find in the genus *Anculosa.* The aperture is smaller than usual in this genus. The upper whorls being decollate, neither their number nor the form of the spire can be given.

PALUDINA COARCTATA.

Testâ lævi, ovatâ, coarctatâ, crassâ, imperforatâ, olivaceâ; spirâ exsertâ; suturis valdè impressis; anfractibus planulatis; aperturâ subparvâ, ovatâ, albâ.

Shell smooth, ovate, compressed, thick, imperforate, olive colour; spire drawn out; sutures much impressed; whorls flattened; aperture rather small, ovate, white.

Hab. Alabama. E. Foreman, M. D. Cabinet of Dr. Foreman. Diam. .50, Length .98 of an inch.

Remarks.—This species, of which a single specimen only was received, differs from all of the genus which has come under my notice. It is remarkable for its compressed form, the body whorl being quite flattened. The apex is eroded, which prevents the number of whorls being ascertained: there appear to be five. The aperture is less round than usual in this genus, and may be rather more than half the length of the shell.

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ARTICLE X.

Description of New Fresh Water and Land Shells. By Isaac Lea. Read August 18, 1843.

Heretofore, very little examination of the rivers and lakes of Florida has been made for the *mollusca* inhabiting them, two or three *Uniones* only having been described from that territory. Recently, I have been fortunate enough to obtain, through the kindness of Dr. Budd, of New York, a number of specimens which were collected by Mr. Samuel B. Buckley, and sent to him. Among them I found only two species before described—the *Unio Blandingianus*, (Nobis,) and *Unio modioliformis*, (Nobis.) The number of new ones proposed in this paper, from that territory, is nine species of *Uniones*. The remainder, from other localities, I owe to the kindness of various friends.

UNIO AMYGDALUM, PL. 39. FIG. 1.

Testâ obovatâ, subinflatâ, valdè inæquilaterali, posticè rotundatâ; valvulis subtenuibus; natibus prominentibus; epidermide politâ, radiatâ; dentibus cardinalibus parvis; lateralibus sublongis curvisque; margaritâ albâ et valdè iridescente.

Shell obovate, somewhat inflated, very inequilateral, rounded behind; valves rather thin; beaks somewhat prominent; epidermis polished, smooth; cardinal teeth small; lateral teeth rather long and curved; nacre white and very iridescent.

Hab. Lake George, Florida. S. B. Buckley.

My cabinet and cabinets of Dr. Budd and Mr. Buckley.

Diam. .5, Length .9, Breadth 1.3 inches.

Shell obovate, somewhat inflated, very inequilateral, rounded and compressed behind; umbonial slope rounded; substance of the shell rather thin; beaks somewhat prominent; ligament very short and thin; epidermis smooth and polished, with numerous green rays covering the whole disk; cardinal teeth small, single in the right and double in the left valve; lateral teeth rather long and curved; anterior cicatrices distinct; posterior cicatrices confluent; dorsal cicatrices placed above the centre of the cavity of the beaks; cavity of the shell deep and rounded; cavity of the beaks rather deep and angular; nacre beautifully pearly and highly iridescent.

Remarks.—This is a small and uncommonly beautiful species. The two specimens before me vary but little in size. They seem to be adult—are about the size of *Unio glans*, (Nobis,) but differ from it entirely in the nacre, in having rays and in being obovate. The epidermis is yellow, but the numerous and close rays which cover the whole disk give it a dark appearance, particularly on the posterior part. The beaks being eroded, I am unable to give their characters, but there is an appearance of obsolete undulations.

Unio Buckleyi, Pl. 39. Fig. 2.

Testâ ellipticâ, inflatâ, valdè inæquilaterali, posticè angulatâ; valvulis crassis; natibus subprominentibus; epidermide tenebroso-fuscâ; dentibus cardinalibus magnis crassisque; lateralibus longis curvisque; margaritâ purpureâ vel salmonis colore tinctâ.

Shell elliptical, inflated, very inequilateral, angular behind; valves thick; beaks rather prominent; epidermis dark-brown; cardinal teeth large and thick, lateral teeth long and curved; nacre purple or salmon-coloured.

Hab. Lake George and Lake Monroe, Florida. S. B. Buckley.
My cabinet and cabinets of Dr. Budd and Mr. Buckley.

Diam. 1.5, Length 2, Breadth 3.7 inches.

Shell elliptical, inflated, very inequilateral, angular behind; substance of the shell thick; beaks rather prominent; ligament long and rather thick; epidermis dark-brown, smooth, and shining, with obscure green rays in the young; cardinal teeth large and thick, single in the right and double in the left valve; lateral teeth long, thick, and slightly curved; anterior cicatrices distinct; posterior cicatrices confluent; dorsal cicatrices placed above the centre of the cavity of the beaks; cavity of the shell rather deep; cavity of the beaks rather deep; nacre purple or salmon-coloured.

Remarks.—A number of specimens of this species are before me, and they present many different forms, differing in many respects as the varieties of the *U. complanatus* do from each other. The prevailing colour of the nacre, which is very brilliant, is salmon, but many are purple—two only are white. The epidermis of all the older specimens is dark-brown—some nearly black, and without rays; the younger are smooth and polished on the outside, with numerous obscure green rays, darker on the posterior slope. The general outline, in most specimens, is like that of *U. Batavus*, (Lam.,) but some individuals approximate to that of *U. ovalis*, (Flem.)

Unio minor, Pl. 39. Fig. 3.

Testâ ellipticâ, subinflatâ, valdè inæquilaterali, posticè rotundatâ; valvulis crassis; natibus subprominentibus; epidermide striatâ, subnigrâ; dentibus cardinalibus subgrandibus; lateralibus parvis curvisque; margaritâ albâ et iridescente.

Shell elliptical, rather inflated, very inequilateral, rounded behind; valves thick; beaks rather prominent; epidermis striate, nearly black; cardinal teeth rather large; lateral teeth small and curved; nacre white and iridescent.

Hab. Lake Monroe and Lake George, Florida. S. B. Buckley.
My cabinet and cabinets of Dr. Budd and Mr. Buckley.

Diam. .4, Length .6, Breadth .9 of an inch.

Shell elliptical, rather inflated, very inequilateral, rounded behind; umbonial slope rounded; substance of the shell thick, thinner behind; beaks rather prominent; ligament very short and thin; epidermis closely striate, nearly black; cardinal teeth rather large; lateral teeth small and curved; anterior cicatrices distinct; posterior cicatrices confluent; dorsal cicatrices placed above the centre of the cavity of the beaks; cavity of the shell deep; cavity of the beaks rather deep and angular; nacre pearly white and iridescent.

Remarks.—This is an interesting species, rather smaller than the *U. parvus*, (Barnes,) and very closely resembling it in most of its characteristics. Like it, the epidermis is dark and roughly striate. It differs in form in not being transverse, but inclining to be obovate—also apparently being devoid of the singularly beautiful undulations of the beaks of the *parvus*. I am not, however, positive on this subject, as the three specimens submitted to my examination are all slightly eroded at the beaks. The position and form of the dorsal cicatrices differ. In the *parvus* they form a row across the cavity of the beaks.

On a close examination of the region of the anterior cicatrices, may be observed a third distinct cicatrix, placed on the side of the anterior portion of the cardinal tooth. Nearly the same position of a cicatrix was observed and described in the *U. cucumoides*, (Nobis.) Trans. Am. Phil. Soc., vol. viii. p. 193.

UNIO FUSCATUS, PL. 40. FIG. 4.

Testâ ellipticâ, subinflatâ, valdè inæquilaterali, posticè biangulatâ; valvulis tenuibus; natibus vix prominentibus; epidermide tenebroso-fuscâ, obsoletè radiatâ; dentibus cardinalibus parvis; lateralibus sublongis subrectisque; margaritâ cupreâ.

Shell elliptical, rather inflated, very inequilateral, biangular behind; valves thin; beaks slightly prominent; epidermis dark-brown, obsoletely radiated; cardinal teeth small; lateral teeth rather long and nearly straight; nacre copper-coloured.

Hab. Black Creek, Florida. S. B. Buckley.

My cabinet and cabinets of Dr. Budd and Mr. Buckley.

Diam. .5, Length .9, Breadth 1.7 inches.

Shell elliptical, rather inflated, very inequilateral, biangular behind; umbonial slope subangular; valves thin; beaks slightly prominent; ligament rather short and thin; epidermis dark-brown—with numerous small obscure green rays, more distinct on the umbones; cardinal teeth small, disposed to be double in both valves; lateral teeth rather long, thin, and nearly straight; anterior cicatrices distinct; posterior cicatrices confluent; dorsal cicatrices placed under the anterior of the lateral tooth. Cavity of the shell rather shallow; cavity of the beaks small and subangular. Nacre copper-coloured and iridescent.

Remarks.—This species somewhat resembles *Unio pusillus*, (Nobis,) but may at once be distinguished by the absence of the sharp angle of the umbonial slope of that shell, and the distinct angle of its posterior margin.—It differs also in the colour of the nacre. The *fuscatus* is dark on the posterior slope, and compressed at the posterior portion of the shell. The minute rays, which are nearly lost in the dark hue of the epidermis, are closer and more distinct towards the beaks. Neither of the three specimens before me are perfect at the beaks, and I am therefore unable to say whether the tips are undulated in this species.

UNIO BUDDIANUS, PL. 40. FIG. 5.

Testâ oblongâ, compressâ, inæquilaterali, posticè subbiangulatâ; valvulis subcrassis; natibus subprominentibus; epidermide subnigrâ; dentibus cardinalibus magnis lamellatisque; lateralibus perlongis subrectisque; margaritâ purpureâ et iridescente.

Shell oblong, compressed, inequilateral, subbiangular behind; valves rather thick; epidermis almost black; cardinal teeth large and lamellar; lateral teeth long and nearly straight; nacre purple and iridescent.

Hab. Lake George and Lake Munroe, Florida. S. B. Buckley.
My cabinet and cabinets of Dr. Budd and Mr. Buckley.

Diam. 1.3, Length .2, Breadth 3.9 inches.

Shell oblong, compressed, inequilateral, subbiangular behind; substance of the shell rather thick; beaks rather prominent; ligament long and rather thick; epidermis almost black, smooth on the superior part of the disk; cardinal teeth large and lamellar, single in the right and double in the left valve; lateral teeth long and nearly straight; anterior cicatrices distinct, posterior cicatrices confluent; dorsal cicatrices in the centre of the cavity of the beaks; cavity of the shell shallow; cavity of the beaks small; nacre purple and very iridescent.

Remarks.—But two individuals of this species are before me, one of which is much younger than the other. In outline and general characteristics it resembles *U. complanatus.* It will, no doubt, be found with white and salmon-coloured nacre. In the larger specimen the anterior dorsal margin is somewhat truncate, and there is a like disposition in the younger one.

UNIO TROSSULUS, PL. 40. FIG. 6.

Testâ obliquâ, cuneatâ, inflatâ, valdè inæquilaterali; posticè subangulatâ; valvulis crassis; natibus prominulis, undulatis; epidermide nitidâ, luteâ, radiatâ; dentibus cardinalibus parvulis; lateralibus rectis subbrevibusque; margaritâ albâ et valdè iridescente.

Shell oblique, wedge-shaped, inflated, very inequilateral, subangular behind; valves thick; beaks somewhat prominent, undulated; epidermis polished, yellow, radiated; cardinal teeth rather small; lateral teeth straight and rather short; nacre white and very iridescent.

Hab. Monroe Lake, Florida. S. B. Buckley.
My cabinet and cabinets of Dr. Budd and Mr. Buckley.

Diam. .6, Length .8, Breadth 1.4 inches.

Shell oblique, wedge-shaped, inflated, very inequilateral, subangular behind; umbonial slope rounded; substance of the shell thick; beaks somewhat prominent, and beautifully undulated at the tip; ligament short and very thin; epidermis smooth, polished, yellow, with dark green rays on the posterior portion; cardinal teeth rather small, double in both valves; lateral teeth straight and rather short; anterior cicatrices distinct; posterior cicatrices confluent; dorsal cicatrices placed across the cavity of the beaks; cavity of the shell rather deep and rounded; cavity of the beaks small and subangular; nacre pearly white and beautifully iridescent.

Remarks.—A single individual only of this beautiful and distinct little species is before me. It has somewhat the form of *Unio Troostensis,* (Nobis,) but may easily be distinguished from that species by its rays, and the undulations of the beaks. In this specimen the anterior portion is yellow with obsolete rays, the posterior portion is dark-green with closely set rays, which are, near the margin, so intense as to give a beautiful deep green border to the interior margin. The undulations of the beaks are numerous, beautifully regular, and double. The nacre is very unusually pearly and brilliant. There is a third distinct cicatrix, resembling that in the *U. minor,* herein described. The *trossulus* has some resemblance to the *amygdalum*, herein described, being nearly of the same size. The latter, however, is a thinner shell, is not oblique, and the rays are distinct over the whole disk.

UNIO OCCULTUS, PL. 41. FIG. 7.

Testâ ellipticâ, compressâ, inæquilaterali, posticè subbiangulatâ; valvulis tenuibus; natibus subprominentibus undulatisque; epidermide nitidâ, tenebroso-fuscâ, obsoletè radiatâ; dentibus cardinalibus subgrandibus; lateralibus longis subcurvisque; margaritâ purpureâ et iridescente.

Shell elliptical, compressed, inequilateral, subbiangular behind; valves thin; beaks somewhat prominent and undulated; epidermis polished, dark-brown, and obscurely radiated; cardinal teeth rather large; lateral teeth long and somewhat curved; nacre purple and iridescent.

Hab. Black Creek and Lake Monroe, Florida. S. B. Buckley.

My cabinet and cabinets of Dr. Budd and Mr. Buckley.

Diam. .8, Length 1.2, Breadth. 2.1 inches.

Shell elliptical, compressed, inequilateral, subbiangular behind; umbonial slope slightly angular; substance of the shell thin; beaks somewhat prominent and minutely undulated at the tip; ligament long and thin; epidermis smooth and polished, dark-brown, with obscure rays over the whole disk; cardinal teeth rather large, and disposed to be double in both valves; lateral teeth long, rather thin, and somewhat curved; anterior cicatrices distinct; posterior cicatrices confluent; dorsal cicatrices under the plate posterior to the cardinal tooth; cavity of the shell shallow; cavity of the beaks small and subangular; nacre purple and iridescent.

Remarks.—The three specimens before me vary but little in size or form, and are all purple—others may differ in colour. It is rather a diminutive species, allied to *complanatus*, but may easily be distinguished from that shell. The epidermis being filled with dark-green rays over the whole disk, gives it a very dark hue. In the more perfect individuals, the exterior is very smooth and highly polished.

UNIO MONROENSIS, PL. 41. FIG. 8.

Testâ ellipticâ, subcompressâ, inæquilaterali, posticè subangulatâ; valvulis crassis; natibus prominulis; epidermide rufo-fuscâ; dentibus cardinalibus parvulis; lateralibus longis, lamellatis curvisque; margaritâ lividâ et iridescente.

Shell elliptical, rather compressed, inequilateral, somewhat angular behind; valves thick; beaks somewhat prominent; epidermis reddish-brown; cardinal teeth rather small; lateral teeth long, lamellar, and curved; nacre livid and iridescent.

Hab. Lake Monroe, Florida. S. B. Buckley.

My cabinet and cabinets of Dr. Budd and Mr. Buckley.

Diam. 1.1, Length 1.7, Breadth 2.8 inches.

Shell elliptical, rather compressed, inequilateral, somewhat angular behind; umbonial slope angular; substance of the shell thick, thinner behind; beaks somewhat prominent; ligament rather long and thick; epidermis smooth, dark-reddish brown, nearly black on the posterior slope; cardinal teeth rather small, disposed to be double in both valves; lateral teeth long, lamellar, and curved; anterior cicatrices distinct; posterior cicatrices distinct; dorsal cicatrices placed under the anterior end of the lamellar tooth; cavity of the shell rather shallow; cavity of the beaks rather deep and angular; nacre livid and iridescent.

Remarks.—A single specimen only of this species is before me.—Other specimens may vary in some characters. It is most nearly allied to *U. crassidens*, (Lam.,) but is a shorter species, and not so thick. The purple and white colour of the nacre in this specimen gives it a livid appearance—other specimens may be found of a salmon colour. It has a fine nacre with a blackish margin. No rays are visible on this specimen.

UNIO AHENEUS, PL. 41. FIG. 9.

Testâ valdè transversâ, compressâ, valdè inæquilaterali, posticè biangulatâ; valvulis tenuibus; natibus vix prominentibus, undulatis; epidermide tenebroso-fuscâ, radiatâ; dentibus cardinalibus minimis; lateralibus longissimis rectisque; margaritâ cupreâ.

Shell very wide, compressed, very inequilateral, biangular behind; valves thin; beaks scarcely prominent, undulated; epidermis dark-brown and rayed; cardinal teeth very small; lateral teeth very long and straight; nacre copper-coloured.

Hab. Black Creek, Florida. S. B. Buckley.
My cabinet and cabinets of Dr. Budd and Mr. Buckley.
Diam. .5, Length .9, Breadth 2.1 inches.

Shell very wide, compressed, very inequilateral, biangular behind; umbonial slope angular and straight; substance of the shell very thin; beaks scarcely prominent, undulated at the tip; ligament very long and thin; epidermis dark-brown, with numerous dark-green oblique rays on the whole disk; cardinal teeth very small and granulate; lateral teeth very long, thin, and straight; anterior cicatrices distinct; posterior cicatrices confluent; dorsal cicatrices placed under the anterior end of the lateral tooth; cavity of the shell shallow; cavity of the beaks very small and angular; nacre dark copper-colour and iridescent.

Remarks.—This is a very distinct species, belonging to that group of which the *complanatus* may be considered to be the type. It is remarkable for its dark copper-coloured nacre, which is very splendent. Indistinct undulations may be observed at the tip of the beaks, although the specimens are both eroded there. The cardinal teeth are remarkable in being so small and in being granular, and the position of the dorsal cicatrices is farther removed from the cardinal tooth than usual—even more so than in the *Unio Shepardianus*, (Nobis.) The posterior slope is elevated, compressed, and made very dark by thick green rays. The flattening behind the umbonial slope causes a second angle at the posterior margin.

UNIO NEGLECTUS. PL. 42. FIG. 10.

Testâ oblongâ, inflatâ, inæquilaterali; valvulis tenuibus; natibus subprominentibus; epidermide luteolâ, radiatâ; dentibus cardinalibus parvis; lateralibus longis, tenuibus subcurvisque; margaritâ subaureâ et iridescente.

Shell oblong, inflated, inequilateral; valves thin; beaks rather prominent; epidermis yellowish, rayed; cardinal teeth small; lateral teeth long, thin, and somewhat curved; nacre somewhat golden and iridescent.

Hab. North Alabama. Dr. Budd.
My cabinet and cabinet of Dr. Budd.
Diam. .8, Length 1.2, Breadth 2 inches.

Shell oblong, inflated on the umbonial slope, which is rounded; substance of the shell very thin, thicker before; beaks rather prominent; ligament rather long and thin; epidermis yellow, inclining to saffron, with rather numerous indistinct green rays, more dense on the posterior portion; cardinal teeth small, tuberculate, single in the right and double in the left valve; lateral teeth long, thin, and somewhat curved; anterior cicatrices confluent; posterior cicatrices confluent; dorsal cicatrices placed under the cardinal tooth; cavity of the shell deep and rounded; cavity of the beaks shallow and angular; nacre somewhat golden-coloured and very iridescent.

Remarks.—A single specimen of this shell was given to me last winter by Dr. Budd, of New York, and I have delayed the description in the hope of having others for comparison. In its exterior form and appearance, it resembles the *Margaritana marginata*—but its teeth at once distinguish it from that species. The cardinal teeth are remarkably small, being little more than tubercles.

Unio superbus. Pl. 42. Fig. 11.

Testâ alatâ, triangulari, valdè inflatâ, valdè inæquilaterali; valvulis subcrassis; natibus elevatis; epidermide tenebroso-fuscâ; dentibus cardinalibus perlongis lamellatisque; lateralibus longis, lamellatis curvisque; margaritâ aureâ et valdè iridescente.

Shell winged, triangular, very much inflated, very inequilateral; valves rather thick; beaks elevated; epidermis dark-brown; cardinal teeth very long and lamellar; lateral teeth long, lamellar, and curved; nacre golden and very iridescent.

Hab. New Holland. J. C. Jay, M.D.
My cabinet and cabinet of Dr. Jay.

Diam. 1.9, Length 3. Breadth 3.6 inches.

Shell winged, triangular, very much inflated, very inequilateral; substance of the shell rather thick, thinner behind; beaks elevated, rounded; ligament very long and rather thin; epidermis dark-brown, with three obscure rays on the posterior slope; cardinal teeth very long, *double* in the right and *single* in the left valve; lateral teeth long, lamellar, and curved; anterior cicatrices confluent; posterior cicatrices confluent; dorsal cicatrices nearly concealed under the plate between the cardinal and lateral teeth; cavity of the shell very deep and rounded; cavity of the beaks very deep and angular; nacre pale golden, brilliant, and iridescent.

Remarks.—I owe to the kindness of Dr. Jay the possession of this beautiful and rare *Unio*. Several of its characteristics are very remarkable; its long cardinal teeth being reversed, the double one being in the right valve and the single one in the left. The nacre is unusually rich and splendid. The beaks of the specimen before me are eroded, but they are perfect enough to observe that the tips must have been thickly set with minute undulations, probably radiating and not concentric. In outline, it has some resemblance to *Unio purpuratus*, (Lam.,) but is more triangular and more inflated.

Dr. Jay received this species from a correspondent in New Holland, accompanied with the *Unio delphinus*, (Nobis.) The latter species does not, however, I believe, exist on that island, but on the coast of Malacca, in the river Souzi, the locality given to me when I described it being erroneous.

UNIO ARATUS, PL. 42. FIG. 12.

Testâ ellipticâ, crebrè et transversè sulcatâ, subcompressâ, inæquilaterali, posticè angulatâ; valvulis subcrassis; natibus prominulis; epidermide pallido-luteâ; dentibus cardinalibus subgrandibus; lateralibus longis curvisque; margaritâ albâ.

Shell elliptical, closely and transversely furrowed, rather compressed, inequilateral, angular behind; valves rather thick; beaks somewhat prominent; epidermis pale-yellow; cardinal teeth rather large; lateral teeth long and curved; nacre white.

Hab. . . . . . .

My cabinet.

Diam. .3, Length .5, Breadth .7 of an inch.

Shell elliptical, thickly, regularly, and transversely furrowed, rather compressed, inequilateral, angular behind; umbonial slope rounded; posterior slope with two raised curved lines extending from the beak to the posterior margin; substance of the shell rather thick; beaks somewhat prominent; ligament very short and very thin; epidermis pale-yellow over the whole disk, and without any appearance of rays; cardinal teeth rather large and disposed to be double in both valves; lateral teeth long and curved; anterior cicatrices distinct; posterior cicatrices distinct; dorsal cicatrices placed across the centre of the cavity of the beaks; cavity of the shell rather shallow; cavity of the beaks rather shallow and angular; nacre white.

Remarks.—A very remarkable little shell which may prove to be rather a young individual. The regular, transverse, closely-set furrows over the whole disk are very striking, it being the first species which I have seen with this perfect characteristic. The beaks are somewhat eroded, and I do not observe any undulations on them. Small ones may, perhaps, occur on perfect specimens. It seems to be somewhat allied to *Unio stramineus*, (Conrad,) but it differs somewhat in outline, and that species is not regularly furrowed, but rather transversely wrinkled, and is rather a large species, with beautiful undulations at the tip of the beaks.

The habitat of this shell is not known. The person from whom I procured it could not even inform me whether it was exotic or not.

ARTICLE IV.

Description of New Fresh Water and Land Shells. By Isaac Lea. Read May 2d, 1845.

The rich Fauna of our country, not yet completely explored, gives me the opportunity of again presenting myself before the Society with descriptions of many new organisms of an interesting nature to the zoologist. The unexplored portions of Tennessee, Alabama, and Louisiana contribute nearly the whole of the species composing this paper—some of them of more than ordinary interest. It will be observed that I have now added twenty-three new species to the already long list of the *Melaniæ*, my last paper containing fifty-seven. I also add six to the interesting genus *Schizostoma*—now making ten species in all—and twenty-six to the family *Naiades*.

In the investigation and necessary research to make myself acquainted with the genus *Melania*, I have necessarily looked up the names of all the known species, and for my own convenience have made an alphabetic list, which I propose to append, for the convenience of those who study this genus. The whole consists of three hundred and ninety-five names, by various authors, but I do not mean to be understood that these are all distinct species—a few are doubtless duplicated. Part of them are fossil.

Regarding my own species, it will be observed that, among some of them, there is a strong alliance; but I have abstained from considering them as typical where I could not find what I presumed to be a constant character. At the same time, I am perfectly aware of the extreme difficulty of separation, arising from the fact of the existence of the vast number of species now described as belonging to this genus, and their consequent inosculation. Where my mind was satisfied, however, after a close and careful examination, that their characteristics were persistent, I have put them down with confidence that they would, in the main, be found to be correct.

Unio hippopœus. Pl. I. Fig. 1.

Testâ plicatâ, ellipticâ, valdè inflatâ; valvulis subcrassis; natibus prominulis; epidermide luteo-fuscâ, striatâ; dentibus cardinalibus subgrandibus; lateralibus parvis curvisque; margaritâ albâ et iridescente.

Shell elliptical, folded, much inflated; valves rather thick; beaks rather prominent; epidermis yellowish-brown, striate; cardinal teeth rather large; lateral teeth small and curved; nacre white and iridescent.

Hab. Lake Erie—B. W. Budd, M. D.

My cabinet and cabinet of Dr. Budd.

Diam. 1.1, Length 1.5, Breadth 2.1 inches.

Shell elliptical, with a few folds on the middle of the disk, and much inflated; substance of the shell rather thick, thinner behind; beaks rather prominent; ligament short and thick; epidermis yellowish-brown and much striate; cardinal teeth rather larger, double in the left and disposed to be treble in the right valve; lateral teeth small, somewhat bladed and curved; anterior cicatrices distinct; posterior cicatrices confluent; dorsal cicatrices placed on the under side of the cardinal tooth; cavity of the shell large and rounded; cavity of the beaks deep and angular; nacre white and iridescent.

Remarks.—This is a small, undulated species, most nearly allied to *U. plicatus*, Lesueur. A single one only is before me for examination, but Dr. Budd informs me that he received about twenty specimens, all bearing the same characters. Had a single specimen only been observed, I should have been disposed to consider it a stunted *plicatus*, with more inflation than usual, and with less development of the folds.

UNIO LATECOSTATUS. Pl. I. Fig. 2.

Testâ crebrè plicatâ, ellipticâ, compressâ; valvulis crassis; natibus prominulis; epidermide tenebroso-fuscâ, valdè striatâ; dentibus cardinalibus magnis; lateralibus longis subrectisque; margaritâ albâ et valdè iridescente.

Shell much folded, elliptical, compressed; valves thick; beaks slightly prominent; epidermis dark-brown, much striated; cardinal teeth large; lateral teeth long and nearly straight; nacre white and very iridescent.

Hab. Tuscaloosa, Alabama. B. W. Budd, M. D.

My cabinet and cabinet of Dr. Budd.

Diam. 1.3, Length 2.5, Breadth 3.5 inches.

Shell very much folded over the whole disk, with thick ribs, visible on the inside, remarkably oval, much compressed; substance of the shell thick before, thinner behind; beaks scarcely prominent; ligament long and rather thick; epidermis very dark-brown, nearly black and much striate; cardinal teeth very large and thick, double in the left and single in the right valve; lateral teeth long, rather thin, and nearly straight; anterior cicatrices distinct; posterior cicatrices confluent; dorsal cicatrices placed on the under side of the cardinal tooth; cavity of the shell very shallow; cavity of the beaks shallow and somewhat angular; nacre white, tinged with purple on the posterior margin, and very iridescent.

Remarks.—But two specimens of this species were received by Dr. Budd, and my cabinet is indebted to him for one of them. The large, regular, and thick fold, and regular oval margin distinguish this shell from the proximate species. It is perhaps most closely allied to *U. undulatus*, Barnes, but may be distinguished at once by its oval form, and the number and regularity of its folds or ribs, which are remarkably parallel. The posterior portion of the valves being rather thin, causes the thick ribs to be impressed on the inside, which has a very unusual and brilliant iridescence, tinged with purple in the nacre. The cardinal teeth are very large in proportion to the lateral teeth.

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Unio utriculus. Pl. I. Fig. 3.

Testâ lævi, ellipticâ, inflatâ; valvulis subcrassis; natibus subprominentibus; epidermide tenebroso-fuscâ; dentibus cardinalibus parvis; lateralibus longis rectisque; margaritâ alba et valdè iridescente.

Shell smooth, elliptical, inflated; valves rather thick; beaks rather prominent; epidermis dark-brown; cardinal teeth small; lateral teeth long and straight; nacre white and very iridescent.

Hab. North Carolina. B. W. Budd, M. D.

My cabinet and cabinet of Dr. Budd.

Diam. .8, Length 1.1, Breadth 1.7 inches.

Shell smooth, regularly elliptical, inflated, very inequilateral, obscurely angular on the umbonial slope; substance of the shell thick before and thin behind; beaks rather prominent; ligament short and thin; epidermis very dark-brown, without rays, and with regular, nearly equidistant lines of growth; cardinal teeth very small, erect, and sharp; lateral teeth long and straight; anterior cicatrices distinct; posterior cicatrices distinct; dorsal cicatrices placed on the under side of the cardinal tooth; cavity of the shell rather deep and rounded; cavity of the beaks shallow and rounded; nacre very white and beautifully iridescent.

Remarks.—Two specimens of this species were received by Dr. Budd. They came with the others from North Carolina, and no doubt from one of the tributaries of the Tennessee river. This species has some resemblance to *U. Vanuxemensis*, (Nobis,) and *U. glans*, (Nobis,) but need not be confounded with either of them. It is less flat than the former, and not so much inflated as the latter, and is dissimilar to each in having a white nacre.

Unio hyalinus. Pl. II. Fig. 4.

Testâ lævi, obovatâ, subinflatâ, diaphanâ; valvulis pertenuibus; natibus prominulis, ad apices undulatis; epidermide tenebroso-fuscâ; dentibus cardinalibus parvis, compressis; lateralibus longis rectisque; margaritâ cæruleo-albâ et iridescente.

Shell smooth, obovate, subinflated, transparent; valves very thin; beaks slightly prominent, undulated at the beaks; epidermis dark-brown; cardinal teeth small and compressed; lateral teeth long and straight; nacre bluish-white and iridescent.

Hab. Richmond, Virginia. Major Le Conte.

Cabinet of Major Le Conte.

Diam. .5, Length .9, Breadth 1.4 inches.

Shell smooth, obovate, rather inflated, transparent; carinate on the posterior slope; substance of the shell very thin; beaks slightly prominent, minutely undulated at the tips; ligament very short and thin; epidermis dark-brown and obscurely rayed; cardinal teeth single in the right valve and slightly cleft in the left valve; lateral teeth single in both valves, long and compressed; anterior cicatrices distinct; posterior cicatrices confluent; dorsal cicatrices placed immediately on the centre of the cavity of the beaks; cavity of the shell rather shallow; cavity of the beaks very shallow and angular; nacre bluish-white and iridescent.

Remarks.—Major Le Conte placed in my hands a single specimen of this species, which he procured from Richmond. It is a distinct and peculiar species which cannot be easily confounded with any other, except one from the Chatahoochee, for which I propose the name of *pellucidus.* It is more triangular than that shell, and differs in the peculiarity of the lateral teeth in both valves being single, while in that shell it is double in the right valve.

UNIO ATRO-COSTATUS. Pl. II. Fig. 5.

Testâ plicatâ, subquadratâ, inflatâ; valvulis crassis; natibus prominentibus; epidermide nigrâ, striatâ; dentibus cardinalibus magnis; lateralibus sublongis subrectisque; margaritâ albâ et iridescente.

Shell folded, somewhat quadrate, inflated; valves thick; beaks somewhat prominent; epidermis black and striate; cardinal teeth large; lateral teeth rather long and nearly straight; nacre white and iridescent.

Hab. Claiborne, Alabama—Judge Tait. Tuscaloosa, Alabama—B. W. Budd, M. D. Alexandria, Louisiana—Josiah Hale, M. D.

My cabinet and cabinets of Dr. Budd and Dr. Hale.

Diam. 1.6, Length 2.5, Breadth 3 inches.

Shell folded, somewhat quadrate, inflated; substance of the shell thick, thinner behind; beaks large, rounded, and rather prominent; ligament rather short and thick; epidermis black and striate; cardinal teeth very large, thick, and wide, double in the left and disposed to be treble in the right valve; lateral teeth rather long and nearly straight; anterior cicatrices distinct; posterior cicatrices confluent; dorsal cicatrices on the under side of the plate near to the cardinal tooth; cavity of the shell rather deep and rounded; cavity of the beaks shallow and angular; nacre white and iridescent.

Remarks.—The late Judge Tait sent me several specimens of this species, many years ago, and subsequently I have received specimens from Drs. Hale and Budd, which have cleared up my previous doubts of its being distinct from its allied species *U. undulatus,* Barnes. It may be distinguished by the outline of *atro-costatus* being more rounded—scarcely taking a quadrate form—in having a more elevated umbo, and in being quite black, where the individual is mature—the young being usually a dark-green.

The specimens, six in number, sent to me by Dr. Budd, are all from Tuscaloosa, and are only slightly folded, the surface of the disk presenting small, irregular undulations, which give it a somewhat varicose or subnodose appearance. The largest of them is only two and a half inches wide, while the largest from Claiborne is nearly five inches wide. There is a slight purple tint on the posterior margin of those from Alexandria.

UNIO PELLUCIDUS. Pl. II. Fig. 6.

Testâ lævi, obovatâ, subcompressâ, pellucidâ; valvulis pertenuibus; natibus prominulis, ad apices undulatis; epidermide tenebroso-fuscâ; dentibus cardinalibus parvis, compressis erectisque; lateralibus longis, rectis lamellatisque; margaritâ cæruleo-albâ et iridescente.

Shell smooth, obovate, rather compressed, pellucid; valves very thin; beaks slightly prominent, undulated at the beaks; epidermis dark-brown; cardinal teeth small, compressed, and erect; lateral teeth long, straight and lamellar; nacre bluish-white and iridescent.

Hab. Chatahoochee river, Georgia. Major Le Conte.

Cabinet of Major Le Conte.

Diam. .5, Length .8, Breadth 1.3 inches.

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Shell smooth, obovate, rather compressed, pellucid, very inequilateral, rounded and enlarged over the umbonial slope; substance of the shell very thin; beaks slightly prominent, minutely undulated at the tip; ligament very short and thin; epidermis dark-brown, and rayed nearly over the whole disk; cardinal teeth single in the right and double in the left valve; lateral teeth double in the right and single in the left valve, long, straight, and lamellar; anterior cicatrices distinct; posterior cicatrices confluent; dorsal cicatrices placed under the plate near to the cardinal tooth; cavity of the shell shallow; cavity of the beaks shallow and rounded; nacre bluish-white and very iridescent.

Remarks.—A single specimen only of this species is before me. It is allied to *U. hyalinus*, described herein, but may be distinguished at once by the form of the teeth, particularly the lateral one, which, in that shell, has the remarkable character of being single in both valves. In the *hyalinus* the carina of the posterior slope is much higher. In the specimen under examination the space about the cavity of the beaks is rubiginose. This may not be a prominent characteristic. The cardinal tooth of the left valve is peculiarly formed, having the superior portion very small, and almost forming a portion of the dorsal line.

Unio tumescens. Pl. III. Fig. 7.

Testâ lævi, triangulari, inflatâ; valvulis percrassis, natibus magnis elevatisque; epidermide tenebroso-fuscâ, radiatâ; dentibus cardinalibus parvis; lateralibus brevibus, crassis subcurvisque; margaritâ albâ et iridescente.

Shell smooth, triangular, inflated; valves very thick; beaks large and elevated; epidermis dark-brown, radiated; cardinal teeth small; lateral teeth short, thick and somewhat curved; nacre white and iridescent.

Hab. Alexandria, Louisiana. J. Hale, M. D.

My cabinet and cabinets of Dr. Hale and T. G. Lea.

Diam. .1, Length 1.3, Breadth 1.5 inches.

Shell smooth, triangular, inflated, flattened on the side from the beaks to the margin, angular on the umbonial slope, nearly equilateral; substance of the shell very thick, thinner behind; beaks large and elevated; ligaments short and thick; epidermis dark-brown, finely striate, and with green rays reaching to the margin; cardinal teeth small, and rather erect; lateral teeth short, thick, and somewhat curved, thickened at the posterior end; anterior cicatrices distinct; posterior cicatrices distinct; dorsal cicatrices placed under the cardinal tooth; cavity of the shell shallow, cavity of the beaks shallow and rounded; nacre white and iridescent.

Remarks.—This species is allied to *U. trigonus*, (Nobis,) and *U. Edgarianus*, (Nobis,) and somewhat resembles *U. obliquus*, Lam. It differs from *trigonus* in being more rounded and in having rays. It is fuller than *Edgarianus*, and is rayed somewhat like it. I have but one perfect specimen and a single odd valve of this species, and in all these three valves the superior posterior cicatrix is remarkably deep and round.

Unio pernodosus. Pl. III. Fig. 8.

Testâ pernodosâ, rotundatâ, subcompressâ; valvulis crassis; natibus elevatis; epidermide luteo-fuscâ; dentibus cardinalibus magnis; lateralibus brevibus, crassis subrectisque; margaritâ albâ.

Shell very nodulous, rounded, rather compressed; valves thick; beaks elevated; epidermis yellowish-brown; cardinal teeth large; lateral teeth short, thick and nearly straight; nacre white.

Hab. North Carolina. B. W. Budd, M. D.

My cabinet and cabinet of Dr. Budd.

Diam. 1.4, Length 2.2, Breadth 2.4 inches.

Shell tuberculate nearly all over, rounded, rather compressed on the sides and towards the margin; substance of the shell thick, thinner behind; beaks elevated; ligament rather short and thick; epidermis yellowish-brown, striate, and crimpled; posterior slope impressed and thickly tuberculate; anterior slope nearly free from tubercles; cardinal teeth large, wide, and double in both valves; lateral teeth short, thick, and nearly straight; anterior cicatrices distinct; posterior cicatrices distinct; dorsal cicatrices placed on the under side of the cardinal tooth; cavity of the shell shallow; cavity of the beaks rather deep and angular; nacre white.

Remarks.—Three specimens of this species were sent to me by Dr. Budd, labelled "North Carolina." They are evidently from that portion of the state which is drained by the tributaries of the river Tennessee, and were accompanied by species common to the Holston, &c. In this we have another species which must be placed in the group which Mr. Barnes' *verrucosus* must be considered to form the type. It certainly is more nearly allied to that species than any other. It differs, however, from it in having a white nacre, instead of a chocolate-coloured one—in having smaller and more frequent tubercles, and in being more rounded in the outline. It differs from *Cooperianus*, (Nobis,) in the tubercles being smaller, more frequent, and in being more compressed. In the three specimens before me there is no indication of flesh colour, which usually is found in the *Cooperianus*. There is no indication of any rays on these specimens, and the beaks of all of them being eroded, they do not present the opportunity of observing their normal undulations.

UNIO FLAVESCENS. Pl. III. Fig. 9.

Testâ lævi, ellipticâ, subinflatâ; valvulis subtenuibus; natibus subprominentibus; epidermide luteo-corneâ, striatâ; dentibus cardinalibus parvis; lateralibus sublongis, subrectisque; margaritâ albâ et iridescente.

Shell smooth, elliptical, somewhat inflated; valves rather thin; beaks somewhat prominent; epidermis yellowish horn colour, striate; cardinal teeth small; lateral teeth rather long and nearly straight; nacre white and iridescent.

Hab. Black Warrior river, Alabama. B. W. Budd, M. D.

My cabinet and cabinet of Dr. Budd.

Diam. .7, Length 1.1, Breadth 1.7 inches.

Shell smooth, elliptical, somewhat inflated, inequilateral, obscurely angular on the umbonial slope, and flattened on the side; substance of the shell rather thick, thinner behind; beaks rather prominent; ligament rather short and thin; epidermis yellowish horn colour, striate, shining, and without rays; cardinal teeth very small, single in the right and double in the left valve; lateral teeth rather long and nearly straight, thickened at the posterior end; anterior cicatrices distinct; posterior cicatrices distinct; dorsal cicatrices placed nearly in the centre of the cavity of the beaks; cavity of the shell rather shallow and rounded; cavity of the beaks shallow and rounded; nacre white and iridescent.

Remarks.—Dr. Budd submitted three specimens of this species to my inspection. They are of various ages, and neither of them have a single ray. The youngest is more yellow than the others. It is nearly allied to *U. simplex*, herein described, but differs from that species in being less heavy, in having no rays, and in being flatter on the side. It answers nearly to the description of Mr. Conrad's *U. Greenii*, but does not agree with his figure, which is more rounded, and has rays.

Unio fulgidus. Pl. IV. Fig. 10.

Testâ lævi, triangulari, inflatâ; valvulis crassis; natibus magnis elevatisque; epidermide tenebroso-fuscâ, politâ, radiatâ; dentibus cardinalibus parvis; lateralibus erassis rectisque; margaritâ albâ et iridescente.

Shell smooth, triangular, inflated; valves thick; beaks large and elevated; epidermis dark-brown, polished, rayed; cardinal teeth small; lateral teeth thick and straight; nacre white and iridescent.

Hab. Alexandria, Louisiana. J. Hale, M. D.

My cabinet and cabinets of Dr. Hale and T. G. Lea.

Diam. .8, Length 1.1, Breadth 1.2 inches.

Shell smooth, triangular, inflated, subangular on the umbonial slope, nearly equilateral; substance of the shell thick, thinner behind; beaks large and elevated; ligament short and thin; epidermis dark-brown, finely polished, with obscure rays, and regular, equidistant marks of growth; cardinal teeth small, lateral teeth short, thick, and straight; anterior cicatrices distinct; posterior cicatrices distinct; dorsal cicatrices placed nearly in the centre of the cavity of the beaks; cavity of the shell very shallow; cavity of the beaks shallow and subangular. Nacre white and iridescent.

Remarks.—This is a small species of which I received one specimen and an odd valve from my brother, T. G. Lea, who received them from Dr. Hale. This species is allied to *U. tumescens*, (Nobis,) herein described. It differs in being less flattened on the sides, in not having an angular umbonial slope, in having a more fine polish, and in the rays being more obscure.

Unio symmetricus. Pl. IV. Fig. 11.

Testâ lævi, oblongâ, subcompressâ; valvulis subcrassis; natibus subprominentibus; epidermide tenebroso-fuscâ; dentibus cardinalibus compressis, elevatis, acuminatis; lateralibus longis, lamellatisque; margaritâ albâ.

Shell smooth, oblong, rather compressed; valves somewhat thick; beaks somewhat prominent; epidermis dark-brown; cardinal teeth compressed, elevated, and pointed; lateral teeth long and lamellar; nacre white.

Hab. Red River, at Alexandria, Louisiana. J. Hale, M. D.

My cabinet and cabinet of Dr. Hale.

Diam. 1.1, Length 1.8, Breadth 3.2 inches.

Shell smooth, oblong, rather compressed, angular behind and rounded before, carinate on the posterior slope; substance of the shell rather thick and regular on the interior surface; beaks somewhat prominent; ligament very long and rather thin; epidermis dark-brown, polished on the umbones, and wrinkled along the margin; cardinal teeth compressed, elevated, pointed, single in the right and double in the left valve; lateral teeth long, lamellar, thickened in the left valve and slightly recurved; anterior cicatrices distinct;

posterior cicatrices confluent; dorsal cicatrices numerous, deep, and placed in the centre of the cavity of the beaks; cavity of the shell rather shallow; cavity of the beaks shallow and angular; nacre white.

Remarks.—Three specimens of this species have been recently sent to me by Dr. Hale. It belongs to the group of which Mr. Say's *camptodon* may be considered as the type, and which includes his *declivis* and *tetralasmus*—if the latter be a true species, of which I am unable to decide, never having seen a specimen of it. In all the three specimens before me the outline is remarkably regular and uniform, and very closely resembles the *declivis*, but the angle is less acute. In the three there is no appearance of rays—one of them is inclined to yellow. The margin of the interior surface is rather broad and dark. The two impressed lines, from the beak to the posterior margin which exist in so many species, are rather more marked than usual. A specimen in Dr. Griffith's cabinet, supposed to be Mr. Conrad's *U. excultus*, approaches very closely to this species, and it may prove, when more perfect individuals are found and compared, to be only a variety.

Unio unicolor. Pl. IV. Fig. 12.

Testâ lævi, subrotundâ, subcompressâ; valvulis crassis; natibus subprominentibus; epidermide fuscâ; dentibus cardinalibus parvis; lateralibus longis subrectisque; margaritâ albâ et iridescente.

Shell smooth, nearly round, rather compressed; valves thick; beaks slightly prominent; epidermis brown; cardinal teeth small; lateral teeth long and nearly straight; nacre white and iridescent.

Hab. Tuscaloosa, Alabama. B. W. Budd, M. D.

Cabinet of Dr. Budd.

Diam. .5, Length .8, Breadth 1.1 inches.

Shell smooth, nearly round, rather compressed and somewhat lenticular; substance of the shell thick, thinner behind; beaks but slightly prominent; ligament short and thin; epidermis rather dark-brown, with very fine, shining striæ; cardinal teeth small, single in the right and double in the left valve; lateral teeth long and nearly straight; anterior cicatrices confluent; posterior cicatrices confluent; dorsal cicatrices on the under side of the plate near the cardinal tooth; cavity of the shell rather shallow and regularly rounded; cavity of the beaks small and slightly angular; nacre very white and iridescent.

Remarks.—This is a very small species, with characteristics more nearly resembling *U. lens*, (Nobis,) than any other with which I am acquainted. One specimen only was sent to me by Dr. Budd.

Unio approximus. Pl. V. Fig. 13.

Testâ lævi, ellipticâ, inflatâ; valvulis subcrassis; natibus prominulis; epidermide luteâ, radiatâ; dentibus cardinalibus parvis, acuminatis; lateralibus longis, subrectisque; margaritâ albâ et iridescente.

Shell smooth, elliptical, inflated; valves rather thick; beaks somewhat prominent; epidermis yellow, radiated; cardinal teeth small, pointed; lateral teeth long and nearly straight; nacre white and iridescent.

Hab. Red River, at Alexandria, Louisiana. J. Hale, M. D.

My cabinet and cabinet of Dr. Hale.

Diam. .1, Length 1.3, Breadth 2.2 inches.

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Shell smooth, elliptical, inflated, rounded before and behind; substance of the shell rather thick; beaks somewhat prominent, nearly terminal; ligament rather long and thin; epidermis yellow, somewhat polished, smooth, with small rays; cardinal teeth double in both valves, erect, pointed; lateral teeth long, nearly straight, lamellar; anterior cicatrices distinct; posterior cicatrices confluent; dorsal cicatrices placed across the centre of the cavity of the beaks; cavity of the shell rather deep and rounded; cavity of the beaks deep and angular.

Remarks.—Dr. Hale has twice sent me this shell, from the Red River, and I have now four specimens before me. I thought when I first received a specimen, some years since, that it was a variety of *Hydiana*, but it differs from that species in being much less ponderous, in the beaks being more terminal, and in being less rayed. These are also smaller. The rays are stronger on the posterior slope. One of the specimens is rayed nearly over the whole disk—another has rays only on the posterior part.

UNIO CAPERATUS. Pl. V. Fig. 14.

Testâ lævi, obliquâ, compressâ; valvulis crassis; natibus elevatis; epidermide rufo-fuscâ; dentibus cardinalibus percrassis; lateralibus longis, à cardinalibus separatis, crassis curvisque; margaritâ albâ.

Shell smooth, oblique, compressed; valves thick; beaks elevated; epidermis reddish-brown; cardinal teeth very thick; lateral teeth long, (being separated from the cardinal teeth,) thick, and curved; nacre white.

Hab. Clinch River, Tennessee. President Estabrook.

My cabinet and cabinets of Mr. Estabrook and Dr. Foreman.

Diam. 1.2, Length 1.9, Breadth 2.5 inches

Shell smooth, oblique, compressed, flattened on the umbones, very inequilateral, surface of the shell thick, thinner behind; beaks elevated; ligament rather long and thick; epidermis reddish-brown, wrinkled, with numerous, irregular, capillary rays; cardinal teeth very thick, large, and disposed to be double in both valves; lateral teeth long, (being separated from the cardinal teeth,) thick, curved, and enlarged at the posterior end; anterior cicatrices distinct; posterior cicatrices distinct; dorsal cicatrices placed under the plate near the cardinal tooth; cavity of the shell shallow; cavity of the beaks deep and angular; nacre white.

Remarks.—I have three specimens of this interesting species before me. They are all mature shells, and a good deal eroded. It belongs to that group of which the *U. irroratus*, (Nobis,) may be considered the type, having the correlative characteristics. It will stand between *irroratus* and *dromas*. From the first it differs in being oblique, and more compressed—from the latter in being smaller, flatter, and not having the humps on the umbones. The capillary rays seem to spread over the whole disk, but the specimens being old and worn, that notable character is nearly obliterated. The colour of the epidermis, in younger specimens, will no doubt be found to be greenish and yellow, and the rays very beautiful, as in the *irroratus*. Two specimens of the three have a tint of salmon-colour in the nacre of the posterior portion. The plate from the beak to the margin, between the cardinal and lateral teeth, is large and flat, and the space between the two teeth very much arched. It is very evident, from the lines of growth, that the young are nearly round, the disk becoming protruded and patulous, when old.

Unio simplex. Pl. V. Fig. 15.

Testâ lævi, ellipticâ, subinflatâ; valvulis subcrassis; natibus subprominentibus; epidermide luteâ; dentibus cardinalibus parvis; lateralibus longis, crassis subrectisque; margaritâ albâ et iridescente.

Shell smooth, elliptical, somewhat inflated; valves rather thick; beaks somewhat prominent; epidermis yellow; cardinal teeth small; lateral teeth long, thick, and nearly straight; nacre white and iridescent.

Hab Black Warrior River, Alabama. B. W. Budd, M. D.

My cabinet and cabinet of Dr. Budd.

Diam. .7, Length .1, Breadth 1.6 inches.

Shell smooth, elliptical, somewhat inflated, rounded and full on the umbonial slope; substance of the shell rather thick, thinner behind; beaks rather prominent; ligament long and narrow; epidermis yellow, shining, and finely striate, with a few capillary rays on the posterior slope; cardinal teeth very small, single in the right and double in the left valve, crenate; lateral teeth long, thick at the posterior end, and nearly straight; anterior cicatrices distinct; posterior cicatrices distinct; dorsal cicatrices placed on the under side of the cardinal tooth; cavity of the shell rather deep; cavity of the beaks rather shallow and rounded; nacre very white and iridescent.

Remarks.—Two specimens of this species were placed under my notice, by Dr. Budd. It has somewhat the aspect of *U. Hydianus*, (Nobis,) but differs in being less transverse and having a more striate surface, and being without the numerous beautiful rays which so generally prevail in that species. Both the specimens before me have the same capillary rays on the posterior slope, and none whatever on the other portions of the disk. The lateral tooth is remarkable for the thickness on the inferior side of the posterior end.

Unio Gouldii. Pl. VI. Fig. 16.

Testâ lævi, ellipticâ, subinflatâ, inequilaterali; valvulis subcrassis; natibus prominulis; epidermide tenebroso-fuscâ; dentibus cardinalibus parvis, subcrassis; lateralibus longis curvisque; margaritâ subaureâ et valdè iridescente.

Shell smooth, elliptical, somewhat inflated, inequilateral; valves rather thick; beaks slightly prominent; epidermis dark-brown; cardinal teeth small and thick; lateral teeth long and curved; nacre somewhat golden and very iridescent.

Hab. Tuscaloosa, Alabama. R. E. Griffith, M. D.

Cabinet of R. E. Griffith, M. D.

Diam. .7, Length 1.1, Breadth 1.9 inches.

Shell smooth, elliptical, somewhat inflated, inequilateral, rounded before and obtusely angular behind; substance of the shell rather thick, thinner before; beaks slightly prominent; epidermis dark-brown, without rays; cardinal teeth small and thick, double in both valves; lateral teeth long, curved in the left valve, the superior one considerably shorter than the inferior one; anterior cicatrices distinct; posterior cicatrices confluent; dorsal cicatrices placed on the plate under the cardinal teeth; cavity of the shell rather shallow; cavity of the beak rather shallow and angular; nacre very soft, satin like, somewhat golden, and very iridescent.

Remarks.—A single specimen of this shell only is before me. My attention was called to it by Dr. Griffith. The beaks are so much worn as to prevent this character from being obscured, and the whole epidermis is in a bad state. In form it is somewhat allied to *U. obscurus*, (Nobis,) but it cannot be easily confounded with that species, being more compressed, and without rays. The lustre of the nacre is very beautiful.

I name this after A. A. Gould, M. D., of Boston, the able investigator of the Mollusca of Massachusetts.

UNIO ESTABROOKIANUS. Pl. VI. Fig. 17.

Testâ lævi, triangulari, valdè compressâ; valvulis crassis; natibus prominulis, compressis, ad apices undulatis; epidermide valdè striatâ, luteo-fuscâ, nitidâ; dentibus cardinalibus compressis; lateralibus brevis crassisque; margaritâ albâ et iridescente.

Shell smooth, triangular, much compressed; valves thick; beaks slightly prominent, compressed and undulated at the tips; epidermis much striated, yellowish-brown and shining; cardinal teeth compressed; lateral teeth short and thick; nacre white and iridescent.

Hab. Clinch River and Second Creek, Tennessee. President Estabrook.

My cabinet and cabinet of Mr. Estabrook.

Diam. .1, Length 2.2, Breadth 3.1 inches.

Shell smooth, triangular, much compressed, nearly equilateral; substance of the shell thick before, thinner behind; beaks slightly prominent, compressed, minutely undulate at the tips; ligament rather short and thick; epidermis coarsely striated over the whole disk, shining and rayless, the marks of growth being distant and regular; cardinal teeth rather large, compressed and double in both valves; lateral teeth short and thick, widely separate from the cardinal tooth, and in the direction of the apex; anterior cicatrices distinct; posterior cicatrices distinct; dorsal cicatrices placed under the plate near the cardinal tooth; cavity of the shell very shallow; cavity of the beaks very shallow and rounded; nacre very white and iridescent.

Remarks.—I dedicate this interesting species to President Estabrook, of Knoxville, Tennessee, to whom I am indebted for a fine suite of species, and many other favours. It is more nearly allied to *U. rubiginosus*, (Nobis,) than to any other species, but differs in the coarse striæ and peculiar surface, which gives it the appearance of being varnished. In the young, the epidermis has the yellow colour of *U. Æsopus*, Green,—in the mature specimen it acquires almost a reddish-brown. The sides are remarkably flattened, and the posterior margin is disposed to be biangular.

UNIO BINNEYI. Pl. VI. Fig. 18.

Testâ lævi, ellipticâ, valdè compressâ, striatâ; valvulis subtenuibus; natibus prominulis; epidermide tenebroso-fuscâ, nitidâ; dentibus cardinalibus parvis, compressis; lateralibus perlongis subcurvisque; margaritâ cæruleo-albâ et iridescente.

Shell smooth, elliptical, much compressed, striated; valves rather thin; beaks slightly prominent; epidermis dark-brown, shining; cardinal teeth small, compressed; lateral teeth very long and rather curved; nacre bluish-white and iridescent.

Hab. Southern States. R. E. Griffith, M.D.

Cabinet of Dr. Griffith.

Diam. .6, Length 1.2, Breadth 2.1 inches.

Shell smooth, elliptical, much compressed, striated, very inequilateral, rounded before and subbiangular behind, flattened anteriorly to the umbonial slope; substance of the shell rather thin; beaks slightly prominent; ligament rather short and very thin; epidermis dark-brown—almost black, without rays, shining, with distinct marks of growth; cardinal teeth small, compressed, double in both valves; lateral teeth very long, thin, lamellar and rather curved; anterior cicatrices confluent, posterior cicatrices confluent; dorsal cicatrices placed nearly in the centre of the cavity of the beaks; cavity of the shell very shallow; cavity of the beaks very shallow; nacre bluish-white and iridescent.

Remarks.—Dr. Griffith called my attention to a single specimen of this shell in his cabinet. The locality is uncertain, except that it is from some one of the southern states—he thinks Alabama. In general form it resembles a very short, compressed *nasutus*, Say. Like it it is flattened posteriorly, but it differs in its epidermis, and in the form of the cardinal teeth. The umbonial slope is slightly biangular. It has somewhat the aspect of *U. multistriatus*, (Nobis,) but it is a thinner shell. The beaks being eroded, the characters could not be ascertained—but they have the aspect of some of the species from South America.

I name this after Amos Binney, M. D., of Boston, a gentleman who has devoted much time to the development of our terrestrial Mollusca.

Unio fuliginosus. Pl. VII. Fig. 19.

Testâ lævi, transversâ, subcompressâ; valvulis subcrassis; natibus prominulis; epidermide tenebroso-fuscâ; dentibus cardinalibus parvis; lateralibus longis curvisque; margaritâ vel albâ vel purpureâ.

Shell smooth, transverse, rather compressed; valves rather thick; beaks slightly prominent; epidermis dark-brown; cardinal teeth small; lateral teeth long and curved; nacre white or purple.

Hab. Cobb's Creek, near Philadelphia. R. E. Griffith, M. D.

My cabinet and cabinet of Dr. Griffith.

Diam. .7, Length 1.1, Breadth 2.2 inches.

Shell smooth, transverse, rather compressed, subangular behind, carinate on the posterior dorsal margin; substance of the shell rather thick; beaks slightly prominent; ligament rather long and thin; epidermis dark-brown, smooth, somewhat polished, without rays, with distant distinct lines of growth; cardinal teeth small, pointed, single in the right and double in the left valve; lateral teeth long, curved upward, and thickened at the posterior end; anterior cicatrices distinct; posterior cicatrices distinct; dorsal cicatrices placed nearly in the centre of the cavity of the beaks; cavity of the shell rather shallow and rounded; cavity of the beaks shallow and somewhat angular; nacre white or purple.

Remarks.—It must be considered as quite a remarkable circumstance that a new species of *Unio* should have remained unobserved in the vicinity of Philadelphia, where so many zoologists have been, within the last thirty years, employed in researches. The first individual captured by Dr. Griffith was obtained about six months since, in Cobb's Creek, near La Grange, the country seat of Manuel Eyre, Esq. Subsequently Dr. Griffith found three more specimens, of different ages. All these are before me, and certainly present characters distinct from any species known to that accurate and experienced naturalist, Dr. Griffith, or myself. By an inexperienced eye it might be considered as an aberrant form of *U. complanatus*, but in outline it is really more like *Margaritana margaritifera*. It differs from *complanatus* in being more transverse, in being without rays, in the remarkable lines of growth, and in its teeth. The lateral tooth enlarges suddenly from the small plate near the cardinal tooth and curves upwards; in the left valve the inferior portion of the lateral tooth is very much thickened. Two of the specimens before me are perfectly white—one is tinged with purple on the posterior portion—the fourth is purple over the whole nacre.

UNIO PALLESCENS. Pl. VII. Fig. 20.

Testâ lævi, ellipticâ, valdè inflatâ; valvulis subcrassis; natibus subprominentibus; epidermide pallido-luteâ; dentibus cardinalibus magnis, compressis erectisque; lateralibus longis curvisque; margaritâ albâ.

Shell smooth, elliptical, much inflated; valves rather thick; beaks slightly prominent; epidermis pale-yellow; cardinal teeth large, compressed and erect; lateral teeth long and curved; nacre white.

Hab. Tuscaloosa, Alabama. B. W. Budd, M. D.

Cabinet of Dr. Budd.

Diam. 1.4, Length .2, Breadth 3.1 inches.

Shell smooth, elliptical, much inflated: substance of the shell rather thick; beaks slightly prominent; ligament long and large; epidermis pale-yellow colour, striate and somewhat shining, apparently without rays; cardinal teeth large, compressed, elevated, pointed and double in both valves; lateral teeth long, lamellar, and curved; anterior cicatrices distinct; posterior cicatrices distinct; dorsal cicatrices placed across the cavity of the beaks; cavity of the shell deep and large; cavity of the beaks small and rounded; nacre silvery-white and iridescent.

Remarks.—A single and not very perfect specimen of this species is before me. It seems to be allied, on one side, to *U. luteolus*, Lam., and, on the other, to *U. stramineus*, Conrad. A large portion of the disks being eroded from the beaks downwards, the characters of the younger growths cannot be observed. Its teeth are very much like those of *luteolus*, but I do not think this specimen could, with propriety be considered to belong to that species.

UNIO CALIGINOSUS. Pl. VII. Fig. 21.

Testâ lævi, ellipticâ, subcompressâ; valvulis subtenuibus; natibus prominulis, ad apicem undulatis; epidermide tenebroso-fuscâ; dentibus cardinalibus compressis, elevatis; lateralibus longis subcurvisque; margaritâ albâ et iridescente.

Shell smooth, elliptical, rather compressed; valves rather thin; beaks somewhat prominent, undulated at the beaks; epidermis dark-brown; cardinal teeth compressed, elevated; lateral teeth long and somewhat curved; nacre white and iridescent.

Hab. Red River, at Alexandria, Louisiana. J. Hale, M. D.

My cabinet and cabinet of Dr. Hale.

Diam. .8, Length 1.2, Breadth 2.2 inches.

Shell smooth, elliptical, rather compressed, obtusely angular behind; substance of the shell rather thin, slightly thickened before; beaks somewhat prominent and minutely undulated at the tip; ligament rather long and thin; epidermis very dark-brown, somewhat wrinkled, and scarcely showing the lines of growth; cardinal teeth compressed, single in the right and double in the left valve, elevated, slightly crenulate, the anterior being the most elevated; lateral teeth long and somewhat curved; anterior cicatrix distinct; posterior cicatrix confluent; dorsal cicatrices placed in the centre of the cavity of the beaks; cavity of the shell rather shallow; cavity of the beaks shallow and angular; nacre white and iridescent.

Remarks.—Five female and three male adults, with two young shells of this species were received from Dr. Hale, at different times. The females are a good deal enlarged over the posterior slope, and spread out on the posterior basal margin. It seems to be nearly allied to *Nashvillianus*, Nobis, and to *Haleianus*, Nobis. It is not so large or pearly a nacre as the latter, nor does it seem to grow quite so large as the former. In the beaks it also differs from it. In some of the old specimens indistinct rays may be observed through the very dark surface. In the two young shells rays may be observed on the whole disk. The undulations of the beaks are small and very closely set.

UNIO SPATULATUS. Pl. VIII. Fig. 22.

Testâ lævi, ellipticâ, compressâ; valvulis subtenuibus; natibus vix prominulis, ad apicem undulatis; epidermide luteâ, valdè radiatâ; dentibus cardinalibus parvis; lateralibus longis rectisque; margaritâ albâ et iridescente.

Shell smooth, elliptical, compressed; valves rather thin; beaks slightly prominent and undulated at the beak; epidermis yellowish, with numerous rays; cardinal teeth small; lateral teeth long and straight; nacre white and iridescent.

Hab. Rock River, Wisconsin. Captain Maryatt and B. W. Budd, M. D.

My cabinet and cabinet of Dr. Budd.

Diam. .6, Length .9, Breadth 1.5 inches.

Shell smooth, elliptical, compressed, very inequilateral; substance of the shell rather thin; beaks but slightly prominent and minutely undulate at the tips; ligament long and thin; epidermis yellowish, with numerous green rays nearly over the whole disk; cardinal teeth very small and pointed, double in the left and single in the right valve; lateral teeth long and straight; anterior cicatrices distinct; posterior cicatrices confluent; dorsal cicatrices placed in the centre of the cavity of the beaks; cavity of the shell shallow; cavity of the beaks shallow and angular; nacre white.

Remarks.—Many years since Captain Maryatt sent me a box of shells from Wisconsin, in which there was a single imperfect specimen of this species. Although pretty well convinced that it was new and undescribed, I delayed inserting it in my former paper, in the hope of getting better specimens. Dr. Budd has submitted to my examination two perfect specimens, neither being eroded even on the beaks, which are finely undulated. It has some resemblance to *U. iris*, Nobis, but is a shorter and a more ponderous shell. It also bears some resemblance to the young of *U. crassus*, Say, and to *U. ellipsiformis*, Conrad, but differs from the latter in the form of the cardinal tooth, and in the beaks, which Mr. Conrad describes as *simple*, while in the *spatulatus* they are *undulate*.

Unio compressissimus. Pl. VIII. Fig. 23.

Testâ lævi, subtriangulari, valdè compressâ; valvulis crassis; natibus compressis; dentibus cardinalibus parvis, crenulatis; lateralibus magnis, crassis curvisque; margaritâ albâ.

Shell smooth, subtriangular, very much compressed; valves thick; beaks compressed; cardinal teeth very small, crenulate; lateral teeth large, thick, and curved; nacre white.

Hab. Holston River, Tennessee. President Estabrook.

My cabinet and cabinets of Mr. Estabrook and Dr. Griffith.

Diam. .8, Length 1.6, Breadth 2.6 inches.

Shell smooth, subtriangular, very much compressed, sub-arcuate at base, and angular behind; substance of the shell very thick, very irregular on the interior surface, thick before and thinner behind; beaks very much compressed and slightly prominent; ligament long and large; cardinal teeth very remarkably small, crenulate, single in the right and double in the left valve; lateral teeth very large, thick, and curved; anterior cicatrices distinct; posterior cicatrices distinct; dorsal cicatrices placed along the edge of the plain over the cavity of the beaks; cavity of the shell exceedingly shallow; cavity of the beaks very shallow and subangular; nacre white.

Remarks.—This is a very remarkable species, being more compressed than any *Unio* which has come under my notice. Both the specimens before me are unfortunately without any epidermis, except along the basal margin, and there too much injured to display any character. Although so completely eroded over the whole exterior surface, they were taken alive, and the interior is fresh. The cavity of the shell being very small, the included soft parts must have been unusually small. The interior aspect of the shell is peculiar, the surface of the nacre being very irregular, almost varicose. In each of the four valves before me there is an impressed line running from the inner side of the great posterior cicatrix up to the cavity of the beak. The form, in younger and more perfect specimens, will, I presume, be found to be more elliptical. It is likely that this species prefers a gravelly bottom and rapid current. It is most nearly allied to *U. phaseolus*, Hild.

Unio pulvinulus. Pl. VIII. Fig. 24.

Testâ lævi, ellipticâ, inflatâ; valvulis crassis; natibus prominentibus; epidermide tenebroso-fuscâ; dentibus cardinalibus minutissimis; lateralibus brevis rectisque; margaritâ albâ et iridescente.

Shell smooth, elliptical, inflated; valves thick; beaks prominent; epidermis dark-brown; cardinal teeth very small; lateral teeth short and straight; nacre white and iridescent.

Hab. Tuscaloosa and Coosawattee River, Murray County, Alab. B. W. Budd, M. D.

My cabinet and cabinets of Dr. Budd and Dr. Griffith.

Diam. .6, Length .9, Breadth 1.2 inches.

Shell smooth, elliptical, inflated, obtusely angular on the umbonial slope and slightly flattened on the sides, inequilateral; substance of the shell thick before and thin behind; beaks rather prominent and full; ligament very short and thin; epidermis dark-brown, smooth, shining and without rays; cardinal teeth very small, erect and pointed, single in the right and double in the left valve; lateral teeth short and straight; anterior cicatrices confluent; posterior cicatrices distinct; dorsal cicatrices placed on the under side of the plate near the cardinal tooth; cavity of the shell deep and rounded; cavity of the beaks very shallow and rounded; nacre pearly white and very iridescent.

Remarks.—A single specimen only of this small species was procured by Dr. Budd. It is nearly allied to *U. castaneus*, Nobis, but may be easily distinguished from it by its not being oblique, and in having the umbonial slope angular. The cardinal teeth are also very much smaller.

Anodonta tetragona. Pl. VIII. Fig. 25.

Testâ lævi, oblongâ, valdè inflatâ; valvulis tenuibus; natibus prominulis; epidermide luteo-fuscâ, radiatâ; margaritâ cæruleo-albâ et iridescente.

Shell smooth, oblong, much inflated; valves thin; beaks somewhat prominent; epidermis yellowish-brown, rayed; nacre bluish-white and iridescent.

Hab. Alexandria, Louisiana. J. Hale, M. D.

My cabinet and cabinet of Dr. Hale.

Diam. 1.00, Length 1.4, Breadth 2.2 inches.

Shell smooth, oblong, very much inflated, subangular on the umbonial slope, inequilateral, incurved on the dorsal margin, angular behind; substance of the shell very thin; beaks somewhat prominent; ligament rather long and thin; epidermis yellowish-brown, with numerous indistinct rays; anterior cicatrices confluent; posterior cicatrices confluent; dorsal cicatrices immediately over the centre of the cavity of the beaks; cavity of the shell deep and rounded; cavity of the beak rather deep and angular; nacre bluish-white.

Remarks.—Among the shells sent to me by Dr. Hale, was a single specimen of this species, which, though nearly allied to Mr. Say's *edentula*, may be easily distinguished by its angular umbonial slope. The rudiments of a cardinal tooth are quite as prominent, if not more so, than in the *edentula*, which, when described by Mr. Say, he considered to belong to his genus *Alasmodonta*. The lines of growth in *tetragona* are distinct and distant, and the basal margin in the interior is somewhat rubiginose.

Margaritana minor. Pl. VIII. Fig. 26.

Testâ lævi, triangulari, compressâ; valvulis tenuibus; natibus prominulis, ad apices undulatis; epidermide virido-luteâ; dentibus cardinalibus parvis; margaritâ cæruleo-albâ et iridescente.

Shell smooth, triangular, compressed; valves thin; beaks slightly prominent, undulated at the beaks; cardinal teeth small; nacre bluish-white and iridescent.

Hab. Tennessee—S. M. Edgar, M. D. North Carolina—B. W. Budd, M. D.

Diam. .5, Length .7, Breadth 1.2 inches.

Shell smooth, triangular, compressed, obtusely angular on the umbonial slope and flattened on the side, inequilateral; substance of the shell very thin and somewhat transparent, thicker before than behind; beaks slightly prominent and minutely undulate at the tips; ligament very short and very thin; epidermis greenish-yellow, greener on the posterior portion, with minute striæ; cardinal teeth very small and somewhat pointed;

anterior cicatrices confluent; posterior cicatrices confluent; dorsal cicatrices placed nearly in the centre of the cavity of the beaks; cavity of the shell very shallow; cavity of the beaks rather shallow and angular; nacre bluish-white and iridescent.

Remarks.—A single specimen of this shell was sent to me many years since, by Dr. Edgar, with many other species. As it was, however, evidently not a mature shell, I hesitated about describing it, although I was well convinced of its being new. Two specimens submitted to me by Dr. Budd, proved to be unquestionably the same, and one, which seems to be mature, has answered for this description. They are no doubt from that part of North Carolina where the streams flow into the Tennessee River.

This species is a very small one, and is allied to *M. deltoidea*, Nobis, but it is a thinner, lighter shell, and smaller. Two of the specimens before me have the posterior portion of the shell greenish, which colour is caused by minute, indistinct rays, which can be distinguished by close examination.

MELANIA SOLIDA. Pl. IX. Fig. 27.

Testâ lævi, obtuso-conicâ, crassâ, solidâ, tenebroso-corneâ; spirâ subbrevi; suturis valdè impressis; anfractibus convexis; aperturâ parvâ, rhomboideâ, ad basim contortâ, intus albâ; columellâ inflectâ.

Shell smooth, obtusely conical, thick, solid, dark horn-colour; spire rather short; sutures much impressed; whorls convex; aperture small, rhomboidal, twisted at the base, white within; columella inflected.

Hab. Tennessee. E. Foreman, M. D.

My cabinet and cabinet of Dr. Foreman.

Diam. .5, Length .9 of an inch.

Remarks.—This species in form somewhat resembles *M. alveare*, Con., on one side, and *M. canaliculata*, Say, on the other. It has not, however, either furrows or tubercles. The three specimens before me have all mutilated apices, and therefore the number of whorls cannot be correctly ascertained. There may be seven or eight. The aperture is about one-third the length of the shell. There is no appearance of bands in these. This is one of those species which have a twisted aperture, being auger-shaped, the outer lip being spread out, and the edge having a line of double curvature. The columella is very much twisted.

MELANIA PROTEUS. Pl. IX. Fig. 28.

Testâ lævi, subcylindraceâ, crassâ, pupæforme, luteo-corneâ; spirâ elevatâ; suturis impressis; anfractibus septenis, subconvexis; aperturâ parvâ, rhomboideâ, ad basim angulatâ, intus albidâ.

Shell smooth, subcylindrical, thick, pupæform, yellowish horn-colour; spire elevated; sutures impressed; aperture small, rhomboidal, angular at the base, within whitish.

Hab. Tuscaloosa, Alabama. B. W. Budd, M. D.

My cabinet and cabinet of Dr. Budd.

Diam. .5, Length 1 inch.

Remarks.—There were six specimens submitted to me by Dr. Budd, which I refer to the one species, although they present considerable difference. Five of the specimens are dead and bleached shells, and are of a light yellow or buff colour. The sixth is a fresh and perfect specimen, with four small purple bands and a tuberculous shoulder, the tubercles being prolonged nearly into folds. Two others are indistinctly banded. Another has a tuberculous shoulder, and is disposed to be granulate. From these varieties arises the name given to it. The aperture is rather contracted, and about two-fifths the length of the shell.

MELANIA LUGUBRIS. Pl. IX. Fig. 29.

Testâ lævi, subacuto-conoideâ, subcrassâ, tenebroso-fuscâ; spirâ subelevatâ; suturis latè impressis; anfractibus planulatis; aperturâ parvâ, rhomboideâ, intus cæruleâ, infernè angulatâ.

Shell smooth, rather acutely conical, rather thick, dark-brown; spire rather elevated; sutures widely impressed; whorls flattened; aperture small, rhomboidal, within bluish, angular below.

Hab. Alabama. Major Le Conte.

Cabinet of Major Le Conte.
Diam. .37, Length .85 of an inch.

Remarks.—A single specimen only of this species was received by Major Le Conte. There are no strong characters to separate it, but it is certainly different from any with which I am acquainted. Like the *canaliculata*, Say, it is auger-shaped on the right lip, but it is a much smaller shell, and without the sulcations of that species. There is an angle in the middle of the whorl which causes the sutures to be rather wide and marked. The apex being eroded, the number of whorls cannot be ascertained—probably eight. The aperture is about one-third the length of the shell.

MELANIA TORTA. Pl. IX. Fig. 30.

Testâ lævi, claviformi, subcrassâ, tenebroso-fuscâ; spirâ obtusâ; suturis impressis; anfractibus convexis; aperturâ grande, ellipticâ; columellâ tortâ.

Shell smooth, club-shaped, rather thick, dark-brown; spire obtuse; sutures impressed; whorls convex; aperture large, elliptical; columella twisted.

Hab. Big Creek, Laurence County, Tennessee. J. Clark.

My cabinet and cabinets of J. Clark and T. G. Lea.
Diam. .36, Length .73 of an inch.

Remarks.—There were eight specimens of this species submitted to my examination by Mr. Clark, of Cincinnati. In general outline and size it very closely resembles *M. Warderiana*, (Nobis,) but differs from the specimens of that species which have come under my notice, in not being carinate, and in having a more twisted columella. The apices of the individuals now before me are slightly eroded, and the number of whorls may be seven or eight. One of the specimens has small folds near the apex, with decussating striæ. The inside is bluish-white—one of the specimens having a brown mark at the columella. The aperture is nearly one-half the length of the shell. Over the whole surface there are small, irregular ridges. The body whorl is very long.

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MELANIA SPURCA. Pl. IX. Fig. 31.

Testâ lævi, pyramidatâ, subcrassâ, tenebroso-fuscâ; spirâ subelevatâ; suturis subimpressis; anfractibus octonis, planulatis; aperturâ parvâ, rhomboideâ, ad basim angulatâ, intus albidâ.

Shell smooth, pyramidal, somewhat thick, dark-brown; spire somewhat elevated; sutures slightly impressed; whorls eight, flattened; aperture small, rhomboidal, angular at the base, within white.

Hab. Alabama. Major Le Conte.

Cabinet of Major Le Conte.

Diam. .43, Length .98 of an inch.

Remarks.—This species, of which only a single one was received by Major Le Conte, has no striking character, but cannot be placed with any other with which I am acquainted. It is very regular in its form, with a patulous, auger-shaped, outer lip, the margin of which is quite sinuous. The aperture is nearly one-third the length of the shell. It more nearly resembles *M. regularis*, (Nobis,) than any other species, but is not so large or solid a shell.

MELANIA ABRUPTA. Pl. IX. Fig. 32.

Testâ lævi, abbreviato-conoideâ, subcrassâ, luteâ; spirâ abbreviatâ; suturis linearibus; anfractibus septenis, planulatis; aperturâ magnâ, ovatâ, intus albidâ.

Shell smooth, short-conical, rather thick, yellowish; spire very short; sutures linear; whorls seven, flattened; aperture large, ovate, within whitish.

Hab. Alabama. Major Le Conte.

My cabinet and cabinet of Major Le Conte.

Diam. .3, Length .64 of an inch.

Remarks.—This species in size and form is somewhat allied to *M. Nickliniana*, (Nobis,) but has the spire more elevated, and is not reddish. The two specimens before me have each two purple bands. This character may be frequent without being constant. The aperture is nearly half the length of the shell.

MELANIA BASALIS. Pl. IX. Fig. 33.

Testâ lævi, ellipticâ, subcrassâ, luteo-viridi, fasciatâ; spirâ curtâ, obtusâ; suturis impressis; anfractibus convexis; aperturâ ovato-elongatâ, ad basim acuto-angulatâ, intus albidâ.

Shell smooth, elliptical, rather thick, yellowish-green, banded; spire short, obtuse; sutures impressed; whorls convex; aperture ovately elongate, at the base acutely angular, within whitish.

Hab. Alabama. Major Le Conte.

My cabinet and cabinet of Major Le Conte.

Diam. .43, Length .83 of an inch.

Remarks.—The elliptical form of this species is very remarkable. The spire is very short and obtuse. The apex of each of the two specimens before me is eroded, two whorls only being perfect. It has numerous purple bands, and the aperture is rather more than half the length of the shell. The base of the shell is extended and slightly retuse. One of the specimens, near to the superior part of the whorl, is disposed to swell into large tubercles. The epidermis is very smooth and polished.

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MELANIA MODESTA. Pl. IX. Fig. 34.

Testâ lævi, conoideâ, subfusiformi, subtenui, nigrâ; spirâ subelevatâ; suturis linearibus; anfractibus planulatis, ultimo in medio angulato; aperturâ ellipticâ, subgrandi, intus tenebrosâ.

Shell smooth, conical, somewhat fusiform, rather thin, black; spire rather elevated; sutures linear; whorls flattened, the last angular in the middle; aperture elliptical, rather large, within dark.

Hab. Chatahoochee River, at Columbus, Georgia. S. Boykin, M.D.

My cabinet.

Diam. .28, Length .67 of an inch.

Remarks.—A single specimen of this species came from Dr. Boykin, with some others, which I published some years since. This one was deferred in the hopes of getting more for comparison. In outline and colour it is very closely allied to a shell I described, from Tennessee, under the name of *tenebrosa*. It differs from it in having the aperture less distended, in having an angle on the middle of the whorl, and in being more fusiform. The apex being eroded, the number of whorls cannot be ascertained—there are about seven. The aperture is nearly one-half the length of the shell. The bands are so broad and dark as to give, in this specimen, a black appearance to the whole shell, except at the termination of the whorl, where the outer lip is yellow.

MELANIA HALEIANA. Pl. IX. Fig. 35.

Testâ lævi, acuto-conoideâ, subtenui, luteo-corneâ, politâ; spirâ elevatâ; suturis impressis; anfractibus novenis, convexis; aperturâ parvâ, ovatâ, ad basim subangulatâ, intus albidâ.

Shell smooth, acutely conical, rather thin, yellowish horn-colour, polished; spire elevated; sutures impressed; whorls nine, convex; aperture small, ovate, at the base angular, within whitish.

Hab. Alexandria, Louisiana. J. Hale, M.D.

My cabinet and cabinet of Dr. Hale.

Diam. .17, Length .64 of an inch.

Remarks.—Among some fifty specimens of small *Melaniæ* sent by Dr. Hale, I found three species, nearly the whole, however, being of the above described. It has no very distinctive character, but cannot be placed with any species with which I am acquainted. It resembles some of the young varieties of *M. Virginica*, Say, but has the whorls more convex, and the aperture smaller. Four or five specimens are banded, and these have uniformly two bands, the inferior one being larger and much more distinctly marked. The first few whorls of the apex are carinate. The aperture is about one-fourth the length of the shell.

MELANIA PUMILA. Pl. IX. Fig. 36.

Testâ lævi, obtuso-conoideâ, subcrassâ, tenebroso-corneâ; spirâ depressâ; suturis valdè impressis; anfractis subconvexis; aperturâ elongatâ, contractâ, ad basim contortâ, intus albidâ.

Shell smooth, obtusely conical; rather thick, dark horn-colour; spire depressed; sutures much impressed; whorls slightly convex; aperture elongate, contracted, twisted at the base, within whitish.

Hab. Tuscaloosa, Alabama. B. W. Budd, M. D.

My cabinet and cabinet of Dr. Budd.

Diam. .27, Length .53 of an inch.

Remarks.—The two specimens before me are, in form and size, the same. They differ in one having two broad, purple bands, and the other being entirely without. On the inferior part of the whorl one has five rather distinct striæ, the other has these less distinct. The apex of each of these is eroded, and therefore the number of the whorls cannot be ascertained. This species is closely allied to *M. alveare*, Conrad, but is a much smaller shell, and in the two individuals before me there is no appearance of the tubercles which usually exist on the carina of the lower whorl of that species.

Melania Alexandrensis. Pl. IX. Fig. 37.

Testâ lævi, subacuto-conoideâ, subtenui, tenebroso-corneâ; spirâ subelevatâ; suturis subimpressis; anfractibus subplanulatis; aperturâ parvâ, subtrapezoideâ, intus albidâ.

Shell smooth, rather acutely conical, rather thin, dark horn-colour; spire rather elevated; sutures somewhat impressed; whorls rather flattened; aperture small and somewhat trapezoidal; within whitish.

Hab. Alexandria, Louisiana. J. Hale, M. D.

My cabinet and cabinet of Dr. Hale.

Diam. .22, Length .58 of an inch.

Remarks.—There were two only of this species which came from Dr. Hale. It closely resembles the *Haleiana*, herein described, but has a less elevated spire, and the aperture differs, in being somewhat auger-shaped, the outer lip being more sinuous. The apex of each being broken, the number of whorls cannot be ascertained. The aperture is rather more than a fourth of the length of the shell.

Melania ovoidea. Pl. IX. Fig. 38.

Testâ lævi, ellipticâ, subcrassâ, corneâ; spirâ brevi; suturis vix impressis; anfractibus senis, subconvexis; aperturâ magnâ, subovatâ, intus albidâ.

Shell smooth, elliptical, rather thick, horn-colour; spire short; sutures slightly impressed; whorls six, slightly convex; aperture large, nearly ovate, within white.

Hab. Alexandria, Louisiana. J. Hale, M. D.

My cabinet and cabinet of Dr. Hale.

Diam. .2, Length .44 of an inch.

Remarks.—A single specimen only of this little species was found among the shells sent by Dr. Hale. It differs entirely from the other two species, and approaches Mr. Say's *depygis*, but is smaller, and has a proportionately larger aperture. The aperture is quite one-half the length of the shell. The columella is somewhat thickened on the superior portion. In the specimen before me there are two broad, rather indistinct brown bands.

MELANIA AURICULÆFORMIS. Pl. IX. Fig. 39.

Testâ lævi, ellipticâ, subtenui, luteâ; spirâ depressâ; suturis impressis; anfractibus senis, subconvexis; aperturâ elongatâ, contractâ, ad basim rotundatâ, intus albidâ.

Shell smooth, elliptical, rather thin, yellow; spire depressed; sutures impressed; whorls six, slightly convex; aperture elongate, contracted, at the base rounded, within whitish.

Hab. Tuscaloosa, Alabama. B. W. Budd, M. D.

Cabinet of Dr. Budd.

Diam. .24, Length .45 of an inch.

Remarks.—This species has very much the aspect of an *Auricula*. It is a very regularly formed and pretty shell, with a smooth, yellow, polished, epidermis. The aperture is about two-thirds the length of the shell, regularly rounded below and angular above, where there is a good deal of nacreous matter deposited.

MELANIA CARINO-COSTATA. Pl. IX. Fig. 40.

Testâ plicatâ, carinatâ, conoideâ, subtenui, vel luteâ vel castaneâ; spirâ subelevatâ; suturis sulcatis; anfractibus planulatis; aperturâ parvâ, ellipticâ; columellâ lævi.

Shell plicate, carinate, conical, rather thin, yellow or chestnut-coloured; spire somewhat elevated; sutures sulcate; whorls flattened; aperture small, elliptical; columella smooth.

Hab. Alabama—Major Le Conte. Tennessee—B. W. Budd, M. D.

My cabinet and cabinets of Major Le Conte and Dr. Budd.

Diam. .36, Length .98 of an inch.

Remarks.—This is a species not easily confounded with any other known to me. The character of the ribs or folds is peculiar; they being arrested near the sutures by an abrupt carina, which has a smaller parallel one between it. The folds and the carinæ are conspicuous, being perfectly pronounced. Two of the six specimens before me are of a dark chestnut-brown, with the nacre of the interior quite rufous. One is more horn-coloured, having four bands, and the nacre whitish. The three others, all from Dr. Budd, are wax-yellow, the ribs less expressed, and the interior yellowish. The apex of each being broken, the number of whorls cannot be determined—I should think there were about eight. The inferior part of the whorl is smooth. The aperture is rather more than one-third the length of the shell.

MELANIA FILUM. Pl. IX. Fig. 41.

Testâ carinatâ, conoideâ, subtenui, tenebroso-corneâ; spirâ elevatâ; suturis impressis; anfractibus planulatis, in medio carinatis; aperturâ parvâ, rhomboideâ, ad basim angulatâ, intus albidâ; columellâ tortâ.

Shell carinate, conical, rather thin, dark horn-colour; spire elevated; sutures impressed; whorls flattened, carinate in the middle; aperture small, rhomboidal, angular at the base, within whitish, columella twisted.

Hab. Alabama. Major Le Conte.

Cabinet of Major Le Conte.

Diam. .47, Length 1.06 inches.

Remarks.—A single specimen only of this species was submitted to me by Major Le Conte. It is very nearly allied to *M. elevata*, Say, but may be distinguished by its thread-like carina on the middle of the whorls, which, on the superior ones, presents a mere simple line. The outer lip is remarkably patulous, presenting the auger-shaped lip which belongs to a certain group of the *Melaniæ*. The apex being imperfect, the number of whorls cannot be ascertained. There are eight visible on this specimen, and it probably possesses ten in a perfect state. The aperture is about one-third the length of the shell.

MELANIA SPINALIS. Pl. IX. Fig. 42.

Testâ carinatâ, acuto-conoideâ, subtenui, luteâ, bifasciatâ; spirâ elevatâ; suturis exaratis; anfractibus planulatis; aperturâ parvâ, ovatâ, ad basim angulatâ, intus albidâ.

Shell carinate, acutely conical, rather thin, yellow, double-banded; spire elevated; sutures ploughed out; whorls flattened; aperture small, ovate, angular at the base, white within.

Hab. Alabama. Major Le Conte.

Cabinet of Major Le Conte.

Diam. .33, Length .96 of an inch.

Remarks.—A single specimen only was submitted to me, and this not very perfect. It is a peculiar shell in its general appearance. The colour being of an unusually bright yellow, with two broad, distinct bands, one immediately above the middle of the whorl and the other below. The superior part of the whorl is darker than that below. The number of whorls cannot be given, the apex being broken. There were probably nine or ten. The aperture is about one quarter the length of the shell.

MELANIA PALLESCENS. Pl. IX. Fig. 43.

Testâ carinatâ, subacuto-conoideâ, subtenui, luteâ; spirâ subelevatâ; suturis impressis; anfractibus novenis, subconvexis; aperturâ parvâ, ovatâ, ad basim angulatâ, intus albidâ.

Shell carinate, rather acutely conical, somewhat thin, yellow; spire somewhat elevated; sutures impressed; whorls nine, rather convex; aperture small, ovate, angular at the base, within whitish.

Hab. Chester District, South Carolina. Professor Vanuxem.

My cabinet and cabinets of Professor Vanuxem and Major Le Conte.

Diam. 34, Length .87 of an inch.

Remarks.—Many years since, my friend Professor Vanuxem gave me several specimens of this shell. Until recently, I was not satisfied that it was not merely a variety of *semicarinata*, Say, but I am disposed to think it differs too much to be considered merely a variety. It is a larger shell, with more whorls and more distinct carinations. The colour also differs, in being much lighter. A single specimen was among the shells sent from Major Le Conte, which, I suspect, is from Georgia, the locality not being certain. Those from Professor Vanuxem are from Major Green's farm. The aperture is less than one-third the length of the shell. All the specimens are without bands but one, which has four large, distinct ones.

MELANIA BUDDII. Pl. IX. Fig. 44.

Testâ striatâ, cylindraceâ, subtenui, corneâ; spirâ attenuatâ; suturis impressis; anfractibus planulatis; aperturâ parvâ, ellipticâ, intus albidâ.

Shell striate, cylindrical, rather thin, horn-colour; spire attenuated; sutures impressed; whorls flattened; aperture small, elliptical, within whitish.

Hab. Tennessee? B. W. Budd, M.D.

My cabinet and cabinet of Dr. Budd.

Diam. .32, Length 1.07 inches.

Remarks.—I have two specimens before me, both of which have seventeen revolving striæ on the lower whorl. They have also a single small band immediately below the middle of the body whorl, which is hidden on the superior whorls. Each of the specimens under examination has the apex broken, but I presume the number of whorls may reach to ten. Eight may be counted in one of these. Dr. Budd mentions, in a note, that "out of six, five have a band." The aperture is about one-fourth the length of the shell. This species is nearly allied to the striate variety of Mr. Say's *M. Virginica*, which he called *multistriata*. The *Buddii* may be distinguished by its being flattened on the whorls, in being more angular on the superior part of the whorls, and in being more attenuate.

MELANIA HARPA. Pl. IX. Fig. 45.

Testâ striatâ, conoideâ, subcrassâ, corneâ; spirâ subelevatâ; suturis subimpressis; anfractibus subconvexis; aperturâ parvâ, ellipticâ, ad basim angulatâ, intus albidâ.

Shell striate, conical, rather thick, horn-colour; spire rather elevated; sutures rather impressed; whorls somewhat convex; aperture small, elliptical, angular at the base, within whitish.

Hab. Tuscaloosa, Alabama. B. W. Budd, M.D.

Cabinet of Dr. Budd.

Diam. .42, Length .8 of an inch.

Remarks.—I am not able to place this with any of the species submitted to me by Dr. Budd, and although a single specimen only is under examination, I have considered it new. It has some resemblance to *M. Haysiana*, but is not so cylindrical, and the aperture is not so narrow. It is transversely striate over the whole whorls. The length of the aperture is about two-fifths the length of the shell. The aperture being eroded, the number of whorls cannot be ascertained.

MELANIA ARCTATA. Pl. IX. Fig. 46.

Testâ striatâ, coarctatâ, crassâ, luteo-corneâ; spirâ conoideâ; suturis valdè impressis; anfractibus senis, planulatis; aperturâ parvâ, rhomboideâ, intus albidâ.

Shell striate, compressed, thick, yellowish horn-colour; spire conical; sutures much impressed; whorls six, flattened; aperture small, rhomboidal, within whitish.

Hab. Tuscaloosa, Alabama. B. W. Budd, M.D.

My cabinet and cabinet of Dr. Budd.

Diam. .40, Length .90 of an inch.

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Remarks.—Among the seven specimens before me there is a good deal of difference. Some are darker than others. Several have the superior portion of the whorl rising into a ridge, quite nodose, while others are entirely without it. This species has more resemblance to *M. Haysiana* than any other which has come under my notice. It is not, however, so elliptical a shell, and the aperture is shorter. The aperture of the *arctata* is rather more than one-third the length of the shell; is obtusely angular below, and somewhat acutely angular above, where it is thickened.

Melania crebri-striata. Pl. IX. Fig. 47.

Testâ transversè et crebrissimè striatâ, subfusiformi, crassâ, luteo-corneâ; spirâ obtusâ; suturis impressis; anfractibus subconvexis; aperturâ parvâ, subovatâ, ad basim angulatâ, intus albidâ; columellâ inflectâ supernè incrassatâ.

Shell transversely and very closely striate, nearly fusiform, thick, yellowish horn-colour; spire obtuse; sutures impressed; whorls somewhat convex; aperture small, rather ovate, angular at the base, within whitish; columella inflected and thickened above.

Hab. Tuscaloosa, Alabama. B. W. Budd, M. D.

My cabinet and cabinet of Dr. Budd.

Diam. .40, Length .76 of an inch.

Remarks.—This species is nearly allied to *M. impressa*, (Nobis,) but may be distinguished by its colour being yellowish, and by its coarser striæ. Its aperture also is smaller. The three specimens before me are very differently banded, one having nine, another three, and the last a rather broad one near the upper part of the whorl. These are only seen on the inside. The apex of each being eroded, the number of the whorls could not be accurately counted. Perhaps there are six. The striæ are so strong that they cause the edge of the outer lip to be crenate. The aperture is about two-fifths the length of the shell. On the superior whorls there are broad, slightly elevated, somewhat oblique ribs. The number of striæ on the three specimens before me are, respectively, sixteen, eighteen, and twenty.

Melania nobilis. Pl. IX. Fig. 48.

Testâ tuberculatâ, conoideâ, subcrassâ, luteo-corneâ; spirâ elevatâ; suturis irregulariter undulatis; anfractibus planulatis, in medio tuberculatis; aperturâ subgrandi, productâ, ad basim angulatâ et canaliculatâ, intus luteâ; columellâ tortâ.

Shell tuberculate, conical, rather thick, yellowish horn-colour; spire elevated; sutures irregularly undulate; whorls flattened, in the middle tuberculate; aperture rather large, elongated, angular, and channelled at the base, within yellowish; columella twisted.

Hab. Alabama. Major Le Conte.

Cabinet of Major Le Conte.

Diam. .72, Length 1.7 inches.

Remarks.—This is among the finest of our American species. It is remarkable for its large size and extended sinus, which allies it to the genus *Io*, in which it might, with no great impropriety, be placed. The specimen before me has eight whorls, and the broken apex would probably present about three more. The central ones have a dark band below, and are of a rather bright horn-colour above. In this specimen there is a rather coarse stria above the row of tubercles, and two smaller ones below. The margin of the outer lip is quite sinuous. It has some resemblance to *M. excurata*, Con., but may be distinguished by having a longer fuse, and in the position of the tubercles, which are not oblique, as described in that shell. When other specimens shall be observed it may be found to differ in some of the characters described above. Aperture rather more than one-third the length of the shell.

MELANIA PERNODOSA. Pl. IX. Fig. 49.

Testâ tuberculatâ, conoideâ, subcrassâ, corneâ, infernè striatâ; spirâ elevatâ, ad apicem costatâ; suturis undulatis; anfractibus octonis, planulatis, pernodosis; aperturâ parvâ, ad basim angulatâ et canaliculatâ, intus albidâ.

Shell tuberculate, conical, rather thick, horn-colour, striate below; spire elevated, ribbed on the apex; sutures undulated; whorls eight, flattened, tuberculate on the inferior portion; aperture small, angular, and canaliculate at the base, within white.

Hab. Cypress Creek, Florence, Alabama. T. R. Dutton.

My cabinet and cabinet of Mr. Dutton.

Diam. .4, Length .68 of an inch.

Remarks.—This is a very remarkable species, having numerous, somewhat oblique tubercles, thickly set in a single row on the middle of the whorls. In the specimen before me, the only one I have seen, there is a dark spot between each of the tubercles. Towards the apex, the tubercles are more elongate and closely set, so as absolutely to become ribs across the whole of the whorl. The aperture is rather more than one-third the length of the shell. The striæ on the inferior half of the whorls are very regular and distinct, and number eight in this specimen.

ANCULOSA SQUALIDA. Pl. IX. Fig. 50.

Testâ lævi, vel rotundâ vel ellipticâ, percrassâ, tenebroso-corneâ; spirâ obtusâ; suturis vix impressis; aperturâ magnâ, subrotundâ, intus albidâ; columellâ percrassâ.

Shell smooth, rounded or elliptical, very thick, dark horn-colour; spire obtuse; sutures scarcely impressed; aperture small, nearly round, within white; columella very thick.

Hab. Tuscaloosa, Alabama. B. W. Budd, M. D.

My cabinet and cabinet of Dr. Budd.

Diam. .45, Length .77 of an inch.

Remarks.—Dr. Budd submitted five specimens to me, and, as is frequently the case, in this genus, I do not find any two of the five exactly of the same outline. One is nearly round and presents but a single whorl. Another, a younger and more perfect specimen, is somewhat elliptical, and presents five whorls and a mammilate form. A third specimen is quite elliptical, the spire being obtusely conical. It is a very solid species, with a broad, thick columella, and a considerable callus above. All the five are obscurely banded. This species is allied to *A. prærosa*, Say, but differs somewhat in form, and has bands, not spotted lines. In some of the specimens the aperture is nearly the whole length of the shell.

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ANCULOSA TINTINNABULUM. Pl. IX. Fig. 51.

Testâ lævi, obtuso-conicâ, campanulatâ, fasciatâ, percrassâ, luteâ; spirâ brevi; suturis impressis; anfractibus quinis, impressis; aperturâ rotundâ, subgrandi; columellâ percrassâ, supernè callosâ.

Shell smooth, obtusely conical, bell-shaped, banded, very thick, yellow; spire short; sutures impressed; whorls five, impressed; aperture rather large, round; columella very thick, callous above.

Hab. Tennessee—E. Foreman, M.D. Tuscaloosa, Alabama—B. W. Budd, M.D.

My cabinet and cabinets of Dr. Foreman and Dr. Budd.

Diam. .48, Length .70 of an inch.

Remarks.—The peculiar, constricted lower whorl, giving a campanulate form to this shell, will distinguish it at once from other species. Six specimens before me are all yellow, with broad, brown bands. A single specimen is perfect enough in the spire to make out five whorls. Two of the specimens are white on the columella, and four are tinted with brown. The outline is very remarkable, in its campanulate form. The mouth, in the perfect specimen, is about two-thirds the length of the shell.

SCHIZOSTOMA* PAGODA. Pl. IX. Fig. 52.

Testâ carinatâ, conicâ, subcrassâ, tenebroso-corneâ; spirâ subobtusâ; suturis valdè impressis; anfractibus senis; fissurâ parvâ; aperturâ ellipticâ, intus albidâ; columellâ lævi.

Shell carinate, conical, rather thick, dark horn-colour; spire rather short; sutures very much impressed; whorls six; fissure small; aperture elliptical, within whitish; columella smooth.

Hab. Tuscaloosa, Alabama. B. W. Budd, M.D.

My cabinet and cabinet of Dr. Budd.

Diam. .35, Length .75 of an inch.

Remarks.—Three of this interesting species are before me. They are very distinct, and may easily be known by the carina being very acute on the superior whorls, presenting the appearance of a Chinese pagoda. The lower whorl is slightly and irregularly striate. The fissure is not deep, but rather wide, being about one-fifth the length of the whorl. The columella at the base is rather angular. The aperture is rather more than one-third the length of the shell.

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* In a paper read before the society December 16, 1842, I described two species belonging to the *Melanianæ*, with the pleurotomose character of a fissure in the outer lip. For one I proposed the name of *Melania excisa*, the other *Anculosa incisa*, and presuming that the shells bearing this characteristic, so remarkable in a *Melanian*, would require to be placed in a new genus, I then proposed the name of *Schizostoma*. Since then, five or six other species have been observed, and the *genus* may be thus characterized:

Testa vel conica vel fusiformis. Labrum supernè fissurâ. Apertura ovata. Columella lævis, incurva. Operculum . . . . .

No operculum has come under my notice, but I can scarcely doubt that it will be found to be horny, and to resemble, in other respects, that of *Melania.*

Schizostoma Buddii. Pl. IX. Fig. 53.

Testâ striatâ, subfusiformi, crassâ, tenebroso-corneâ; spirâ obtuso-conicâ; suturis irregulariter impressis; anfractibus senis, subinflatis; fissurâ parvâ, obliquâ; aperturâ magnâ, rhomboideâ, intus albidâ; columellâ supernè callosâ.

Shell striate, subfusiform, thick, dark horn-coloured; spire obtusely conical; sutures irregularly impressed; whorls six, rather inflated; fissure small, oblique; aperture large, rhomboidal, whitish within; columella thickened above.

Hab. Tuscaloosa, Alabama. B. W. Budd, M. D.

My cabinet and cabinet of Dr. Budd.

Diam. .47, Length .83 of an inch.

Remarks.—This is a robust shell, being thicker and heavier than any other species of this genus which I have observed. The aperture is nearly one-half the length of the shell. Two specimens were sent together by Dr. Budd, presuming they were the same. One, however, which is not quite a mature shell, has little or no fissure. The other, from which the description is made, has a wide but short fissure, and the margin of it opens obliquely.

Schizostoma Babylonicum. Pl. IX. Fig. 54.

Testâ striatâ, subfusiformi, subcrassâ, castaneâ; spirâ obtuso-conicâ; suturis impressis; anfractibus planulatis; fissurâ parvâ; aperturâ magnâ, ellipticâ, intus subcarneâ; columellâ lævi, ad basim angulatâ, supernè incrassatâ.

Shell striate, somewhat fusiform, rather thick, chestnut-coloured; spire obtusely conical; sutures impressed; whorls flattened; fissure small; aperture large, elliptical, somewhat flesh-coloured within; columella smooth, angular at the base, thickened above.

Hab. Tuscaloosa, Alabama. B. W. Budd, M. D.

Cabinet of Dr. Budd.

Diam. .48, Length 1 inch.

Remarks.—A single specimen only of this species was submitted to me. It differs from the other described species in being angular at the superior portion of the whorl along the lower margin of the fissure, making quite a shoulder, and giving it the Babylonic appearance. The fissure is wide, but not deep. The apex being much eroded, the number of whorls could not be ascertained. The aperture is nearly half the length of the shell. The deposit on the columella in this individual does not cover the perforation. In others, this may differ. The outer lip is quite patulous.

Schizostoma constrictum. Pl. IX. Fig. 55.

Testâ lævi, subfusiformi, subtenui, luteo-corneâ; spirâ obtusâ; suturis impressis; anfractibus coarctatis; fissurâ submagnâ, subobliquâ; aperturâ magnâ, ellipticâ, intus albidâ; columellâ lævi, ad basim subangulatâ.

Shell smooth, somewhat fusiform, rather thin, yellowish horn-colour; spire obtuse; sutures impressed; whorls constricted; fissure rather large, somewhat oblique; aperture large, elliptical, whitish within; columella smooth, subangular at the base.

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Hab. Tuscaloosa, Alabama. B. W. Budd, M. D.

Cabinet of Dr. Budd.

Diam. .43, Length .75 of an inch.

Remarks.—A single specimen only of this species was among the shells submitted to me by Dr. Budd. It differs from those I have seen in having a rather broad channel impressed immediately above the centre of the whorl. This character may, however, differ in other individuals. The fissure is rather wide, but not deep. The apex being eroded, the number of whorls could not be ascertained. The aperture is about one-half the length of the shell. There is no appearance of bands about this specimen.

SCHIZOSTOMA FUNICULATUM. Pl. IX. Fig. 56.

Testâ striatâ, ellipticâ, subcrassâ, castaneâ; spirâ obtusâ; suturis valdè impressis; anfractibus convexis; fissurâ submagnâ, obliquâ; aperturâ magnâ, ellipticâ; columellâ supernè callosâ.

Shell striate, elliptical, rather thick, chestnut-coloured; spire obtuse; sutures much impressed; whorls convex; fissure rather large, oblique; aperture large, elliptical; columella thickened above.

Hab. Tuscaloosa, Alabama. B. W. Budd, M. D.

Cabinet of Dr. Budd.

Diam. .4, Length .66 of an inch.

Remarks.—A single specimen only was obtained by Dr. Budd of this species. It is short, stout, and almost subrotund. It has two elevated, cord-like lines, revolving on the whorls. One immediately under the suture, the other below that again. The aperture is more than half the length of the shell. The apex is so much eroded as to prevent the number of whorls being ascertained. There are about six.

SCHIZOSTOMA LACINIATUM. Pl. IX. Fig. 57.

Testâ lævi, obtuso-conicâ, subcrassâ, fasciatâ, luteo-corneâ; spirâ obtusâ; suturis exaratis; anfractibus convexis; fissurâ profundâ; aperturâ ellipticâ, intus albidâ; columellâ lævi, supernè incrassatâ.

Shell smooth, obtusely conical, rather thick, banded, yellowish horn-colour; spire obtuse; sutures excavated; whorls convex; fissure deep; aperture elliptical, whitish within; columella smooth, thickened above.

Hab. Tuscaloosa, Alabama. B. W. Budd, M. D.

Cabinet of Dr. Budd.

Diam. .25, Length .45 of an inch.

Remarks.—This is the smallest species I have seen. The mouth and fissure of this specimen are perfect, but the apex is much eroded, and the number of whorls cannot therefore be ascertained. There are four bands very distinctly marked on the inside. The aperture appears to be about one-half the length of the shell. The fissure is very narrow and remarkably deep, extending nearly one-fourth round the whorl. The cicatrix along the suture is of a lighter colour. The marks of growth are distinct, and give a laciniate appearance.

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PALUDINA HALEIANA. Pl. IX. Fig. 58.

Testâ lævi, ventricoso-conoideâ, subtenui, rufo-corneâ, imperforatâ; spirâ brevi; suturis valdè impressis; anfractibus quaternis, subconvexis; aperturâ magnâ, subrotundâ, cæruleâ.

Shell smooth, ventricosely conical, rather thin, reddish horn-colour, imperforate; spire short; sutures much impressed; whorls four, nearly convex; aperture large, nearly round, bluish.

Hab. Alexandria, Louisiana. J. Hale, M. D.

My cabinet and cabinet of Dr. Hale.

Diam. .4, Length .55 of an inch.

Remarks.—This species is nearly allied to the *P. Troostiana*, (Nobis,) but is rather smaller, of a darker colour, not quite so rotund, and imperforate. These differences would distinguish it without difficulty. In the *Haleiana* there is a disposition in most of the specimens to a compression below the sutures. This makes quite a shoulder at the sutures and prevents the mouth from being regular.

NOTE.—Since the first sheet of this paper was printed off, two more *Melania*, by Dunker, have been added to the list, making in all three hundred and ninety-seven.

CATALOGUE OF THE GENUS MELANIA,

RECENT AND FOSSIL.

Melania abjecta,	Haldeman.
“ abrupta,	Lea.
“ acicula, (Eulima,)	Philippi.
“ aculeus,	Lea.
“ acuminata,	Dunker.
“ acuto-carinata,	Lea.
“ acuta,	Lea.
“ adspersa,	Torschel.
“ Ægyptiaca,	Benson.
“ æqualis,	Hald.
“ Æthiops,	Beck.
“ afra,	Zeigler.
“ agnata,	Pfeiffer.
“ Alexandrensis,	Lea.
“ altilis,	Lea.
“ alveare,	Conrad.
“ amarula,	Lamarck.
“ angulosa,	Menke.
“ annulifera,	Conrad.
Melania annulata,	Ferussac.
“ anthracina,	Von Den Busch.
“ approxima,	Haldeman.
“ arata,	Lea.
“ arctata,	Lea.
“ arcuata,	Zool. Soc., 1843.
“ armigera,	Say.
“ asperata,	Lamarck.
“ aspirans,	Hinds.
“ attenuata,	Woodward. *f.*
“ ater,	Rich.
“ auricularis,	Ferussac.
“ auriculæformis,	Lea.
“ auricula,	Grateloup. *f.*
“ aurita, (Pirena, Lam.,)	Rang.
“ auriscalpium,	Menke.
“ Babylonica,	Lea.
“ basalis,	Lea.
“ Batana,	Gould.

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Melania	bella-crenata,	Haldeman.
"	bella,	Conrad.
"	bellicosa,	Hinds.
"	bicarinata,	Grateloup.
"	bilineata,	Gold, Pfeif. *f.*
"	bilineata,	Pfeif. *f.*
"	bitæniata,	Conrad.
"	blanda,	Lea.
"	Boscii, (Eulima,)	Phil.
"	Boykiniana,	Lea.
"	breviformis,	Parreyss.
"	brevis,	Lea.
"	Brocchii,	Brown.
"	buccinalis,	Deshayes.
"	Buddii,	Lea.
"	Byronensis,	?
"	caliginosa,	Lea.
"	Cambessedesii, Eulima elegantissima, Pay. Turbo politus, Lam.	Pay.
"	campanella,	Philippi.
"	canaliculata,	Say.
"	cancellata,	Say.
"	cancellata,	(?)
"	canicularis,	Lamarck.
"	carinifera,	Lamarck.
"	carino-costata,	Lea.
"	carinata,	Ravenel.
"	Carolinæ,	Gray.
"	castanea,	Lea.
"	catenarea,	Say.
"	catenoides,	Lea.
"	Celebensis,	Quoy, Desh.
"	Cincinnatiensis,	Lea.
"	circincta,	Lea.
"	clathrata,	Grat. *f.*
"	clava,	Lamarck. *f.*
"	clavæformis,	Lea.
"	clavula,	Deshayes. *f.*
"	coarctata,	Lamarck.
"	cochlearella, (Rissoa,)	Lamarck. *f.*
"	coffea,	Philippi.
"	columella,	Lea.
"	comma,	Conrad.
"	concinna,	Lea.
"	congesta,	Say.
"	conica,	Say.
"	conica,	Gray.
"	constricta,	Lamarck. *f.*
"	cornea,	Kruster.
"	coronata,	Von Den Busch.
"	coronata,	Kruster.
"	corrugata,	Lamarck.

Melania	costata,	Quoy, Desh.
"	costata,	Ravenel.
"	costata,	Sowerby. *f.*
"	costata,	Quoy, Desh.
"	costellata,	Lamarck. *f.*
"	costifera,	Haldeman.
"	costulata,	Lea.
"	costulata,	Mühlfeld.
"	crassa,	Von Den Busch.
"	crassa,	Parreyss.
"	crebri-costata,	Lea.
"	crebri-striata,	Lea.
"	crenulata,	Deshayes.
"	cruentata,	Menke.
"	Curreyana,	Lea.
"	curta,	Haldeman.
"	curta,	Menke.
"	curvata,	Lea.
"	curvicosta,	Deshayes. *f.*
"	Cuvieri,	Deshayes. *f.*
"	cylindracea,	Conrad.
"	decora,	Lea.
"	decollata,	Lamarck.
"	decussata,	Deshayes. *f.*
"	Dembea,	Ruppell.
"	depygis.	Say.
"	Deshaysiana,	Lea.
"	dilatata,	Con.
"	distorta, (Eulima,)	Defrance. *f.*
"	dubia,	Lamarck.
"	dubiosa,	Lea.
"	Duisabonis,	Grateloup.
"	Duttoniana,	Lea.
"	ebenum,	Lea.
"	eburnea,	Mühlfeld. (?)
"	Edgariana,	Lea.
"	elegans,	Schmidt.
"	elevata,	Say.
"	elongata,	Lea.
"	erodes,	Zeigler.
"	erosa,	Lesson.
"	erythrostoma,	Quoy, Desh.
"	exarata,	Menke.
"	exarata,	Lea.
"	excisa,	Lea.
"	excurata,	Con.
"	exilis,	Haldeman.
"	expansa,	Lea.
"	fasciata,	Sowerby. *f.*
"	fasciata,	Von Den Busch.
"	fasciata,	Menke.
"	fasciolata,	Lamarck.

Melania figurata,	Hinds.
" filum,	Lea.
" flamigera,	Dunker.
" flammulata,	Von Den Busch.
" flavida,	Dunker.
" florata,	Hinds.
" Florentiana,	Lea.
" fluminalis,	Mühlfeld.
" Foremani,	Lea.
" formosa,	Conrad.
" fragilis,	Lamarck.
" Frethii,	Gray.
" fulgurans,	Hinds.
" fuliginosa,	Lea.
" fumosa,	Hinds.
" funiculus,	Quoy., Desh.
" fusca,	Rang.
" fusca,	Philippi.
" fuscata,	Deshayes.
" fusiformis,	Lea.
" gaudiosa,	Hinds.
" glabra,	Lea.
" glabrata,	Mühlfeld.
" glans,	Von Den Busch.
" globula,	Lea.
" globulosa,	Grey.
" gracilis,	Lea.
" gracilis,	Anthony, Hald.
" grana,	Von Den Busch.
" granifera,	Lamarck.
" Haleiana,	Lea.
" harpa,	Lea.
" harpæformis,	Hock, Desh. *f.*
" harpula,	Dunker.
" Haysiana,	Lea.
" Heddingtonensis,	Sowerby. *f.*
" Helvetica,	Michelin.
" Henriettæ,	Gray.
" Hildrethiana,	Lea.
" Hollandri,	Ferussac.
" Holstonia,	Lea.
" hordacea,	Lamarck. *f.*
" Hugelii, (Melanopsis?)	Philippi.
" Hydei,	Con.
" impressa,	Lea.
" inæquata,	Fischer de Valdh.
" incerta,	Grat. *f.*
" inermis,	Gray.
" inflata,	Lea.
" inflata,	Haldeman.
" inflexa,	Phillips. *f.*
" inquinata,	Defrance. *f.*
Melania integra,	Say.
" intermedia,	Von Den Busch.
" interrupta,	Haldeman.
" intersita,	Haldeman.
" isogona,	Say.
" Jayana,	Lea.
" Kirtlandiana,	Lea.
" lactea,	Lamarck. *f.*
" læta,	Jay.
" lævigata,	Deshayes. *f.*
" lævis,	Lea.
" lævissima,	Sowerby.
" laqueata,	Say.
" Largillierti,	Philippi.
" latebrosa,	Hinds.
" Lecontiana,	Lea.
" ligata,	Menke.
" lima,	Conrad.
" lineata,	Sowerby. *f.*
" lineata,	Troschel.
" lineolata,	Gray.
" livescens,	Menke.
" lirata,	Menke.
" luctuosa,	Hinds.
" lugubris,	Lea.
" macilenta,	Menke.
" maculata,	Parreyss.
" Madagascariensis,	Grateloup.
" magnifica,	Conrad.
" marginata,	Lamarck. *f.*
" Matoni,	Gray.
" melanoides,	Conrad.
" minima,	Sowerby. *f.*
" mitra,	Dunker.
" mitra,	Desh., Lam.
" modesta,	Lea.
" mœsta,	Hinds.
" Molluccensis,	Quoy, Desh.
" monozonalis,	Lea.
" multilata,	Say.
" multilineata,	Say.
" mutans,	Gould.
" nassula,	Conrad.
" Niagarensis,	Lea.
" Nickliniana,	Lea.
" nitens,	Lea.
" nitida,	Lamarck.
" nobilis,	Lea.
" nodulosa,	Lea.
" nupera,	Say.
" obovata,	Say.
" obtusa,	Lea.

Melania occata,	Hinds.
" occidentalis,	Lea.
" Ocoeensis,	Lea.
" oliva,	Lea.
" olivata,	Conrad.
" olivula,	Conrad.
" Ordiana,	Lea.
" ornata,	Von Den Busch.
" ornata,	Grat. *f.*
" ovalis,	Lea.
" ovoidea,	Lea.
" ovularis,	Menke.
" Owenii,	Gray.
" pallescens,	Lea.
" pallida, (Chemnitzia,)	Philippi.
" Papuensis,	Quoy, Desh.
" perfusca,	Lea.
" pernodosa,	Lea.
" perpinguis,	Hinds.
" picta,	Lea.
" picta,	Hinds.
" pilula,	Lea.
" plicata,	Menke.
" plicata,	Lea.
" plicatula,	Desh.
" plicifera,	Lea.
" pluristriata,	Say.
" Plutonis,	Hinds.
" polita,	Desh. *f.*
" portalis,	Rossmaessler.
" Potosiensis,	Lea.
" prærosa, (Anculosa,)	Say.
" prasinata,	Con.
" producta,	Lea.
" Proteus,	Lea.
" proxima,	Say.
" pugilis,	Hinds.
" pulchella,	Anthony.
" pumila,	Lea.
" punctata,	Lamarck.
" pygmæa,	Hoch., Desh.
" pyramis,	Benson.
" pyramidata,	Sowerby. *f.*
" pyramidata,	Hinds.
" pyrenella,	Conrad.
" quadriseriata,	Gray.
" Rangii,	Deshayes.
" regularis,	Lea.
" Reirvardii,	Van Haan.
" retusa,	Gray.
" Riqueti,	Grateloup.
" robusta,	Lea.
Melania Rogersii,	Conrad.
" rufa,	Philippi.
" rufescens,	Lea.
" rufula,	Haldeman.
" rugosa,	Lea.
" salebrosa,	Conrad.
" Sayii,	Ward.
" scabra,	Fer., Desh.
" scalaria,	Philippi.
" scalarina,	Pfeiffer.
" scalaris,	Spix & Wagner.
" Scheideana,	Philippi.
" scolopaceus,	Lamarck.
" semicarinata,	Say.
" semicancellata,	Von Den Busch.
" semicostata,	Conrad.
" semidecussata,	Lamarck. *f.*
" semigranosa,	Von Den Busch.
" semiplicata,	Lamarck. *f.*
" semistriata,	Lamarck. *f.*
" setosa,	Swainson, Desh.
" siccata,	Von Den Busch.
" simplex,	Say.
" solida,	Lea.
" soluta,	Philippi.
" sordida,	Lea.
" spina,	Grat. *f.*
" spinalis,	Lea.
" spinifera,	Adams.
" spinulosa,	Lamarck, Phil.
" Spixiana,	Lea.
" spurca,	Lea.
" striata,	Sowerby. *f.*
" striatula,	Lea.
" strigilata,	Dunker.
" strigosa,	Lea.
" stygia,	Say.
" subcarinata,	Gray.
" subcylindracea,	Lea.
" subglobosa,	Say.
" subsolida,	Lea.
" substricta,	Haldeman.
" subulata,	Lamarck.
" subularis,	Lea.
" sulcata,	Sowerby. *f.*
" sulcosa,	Lea.
" sulcosa,	Menke.
" suturalis,	Haldeman.
" symmetrica,	Haldeman.
" Taitiana,	Lea.
" Tarbelliana,	Grateloup. *f.*
" tenebrosa,	Lea.

Melania terebella,	Mühlfeld.
" terebra,	Von Den Busch.
" terebralis,	Lea.
" teres,	Lea.
" testudinaria,	Von Den Busch.
" thiarella,	Lamarck.
" Tirouri,	Ferussac.
" torquata,	Lea.
" torquata,	Von Den Busch.
" torta,	Lea.
" tricarinata,	Woodward. *f.*
" trilineata,	Say.
" triticea,	Ferussac. *f.*
" trochiformis,	Conrad.
" Troostiana,	Lea.
" truncata,	Lamarck.
" truncatula,	Lamarck.
" tuberculata,	Muller. (?)
" tuberculata,	Von Den Busch.
" tuberculata,	Lea.
" tuberculata,	Spix & Wagner.
" tuberculosa,	Rang.
" turgida,	Lea.
" turritella,	Dunker.
Melania tympanorum, (Pirena aurita, Lam.,)	Deshayes.
" tympanotonus,	Deshayes.
" uncialis,	Haldeman.
" undulata,	Say.
" uniformis,	Quoy, Desh.
" Vanuxemiana,	Lea.
" variabilis,	Defrance. *f.*
" varicosa,	Ward.
" varicosa,	Troschell.
" variegata,	Menke.
" ventricosa,	Rang.
" venusta,	Lea.
" verrucosa,	Hinds.
" vestita,	Conrad.
" vibex,	Mühlfeld.
" virgata,	Lea.
" Virginica,	Say.
" virgulata,	Fer., Desh.
" viridis,	Lea.
" vittata,	Philippi. *f.*
" Warderiana,	Lea.
" Winteri,	Von Den Busch.
" zonata,	Von Den Busch.
" Zinkeni,	Dunker.

Since the preceding sheet was put to press, I have received from Dr. Philippi some numbers of his "Abbildungen und Beschreibungen neuer oder wenig gekannter Conchylien," in which I find the following *Melaniæ* not in the above catalogue. They increase the list of species to four hundred and seventeen.

Melania (Melanopsis,) Braziliensis,	Moricand.
" cingulata,	Jonas.
" costata,	Olivier.
" (Melanopsis,) crenocarina,	Moricand.
" Gruneri,	Jonas.
" (Melanopsis,) Helena,	Meder.
" inhonesta,	Von Den Busch.
" Javanica,	Von Den Busch.
" (Melanopsis,) Kotchyi,	Von Den Busch.
" (?) obesa,	Philippi.
Melania (Melanopsis,) Parreyssii,	Von Mühlfeld.
" porcata,	Jonas.
" pyramis,	Von Den Busch.
" rivularis,	Philippi.
" scabrella,	Philippi.
" semicostata,	Philippi.
" subnodosa,	Philippi.
" suturalis,	Philippi.
" turgidula,	Philippi.
" (Melanopsis,) variabilis,	Von Den Busch.

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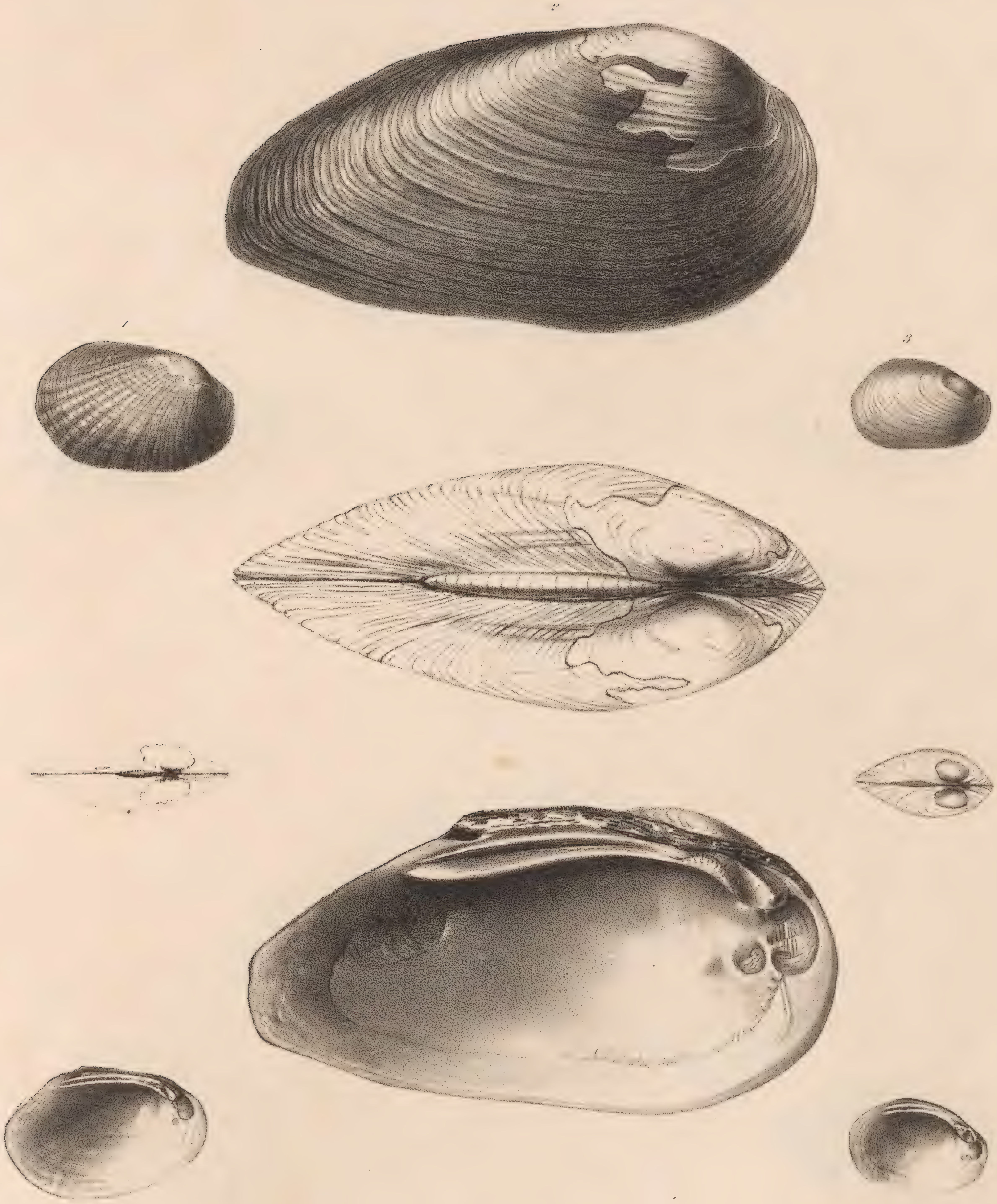
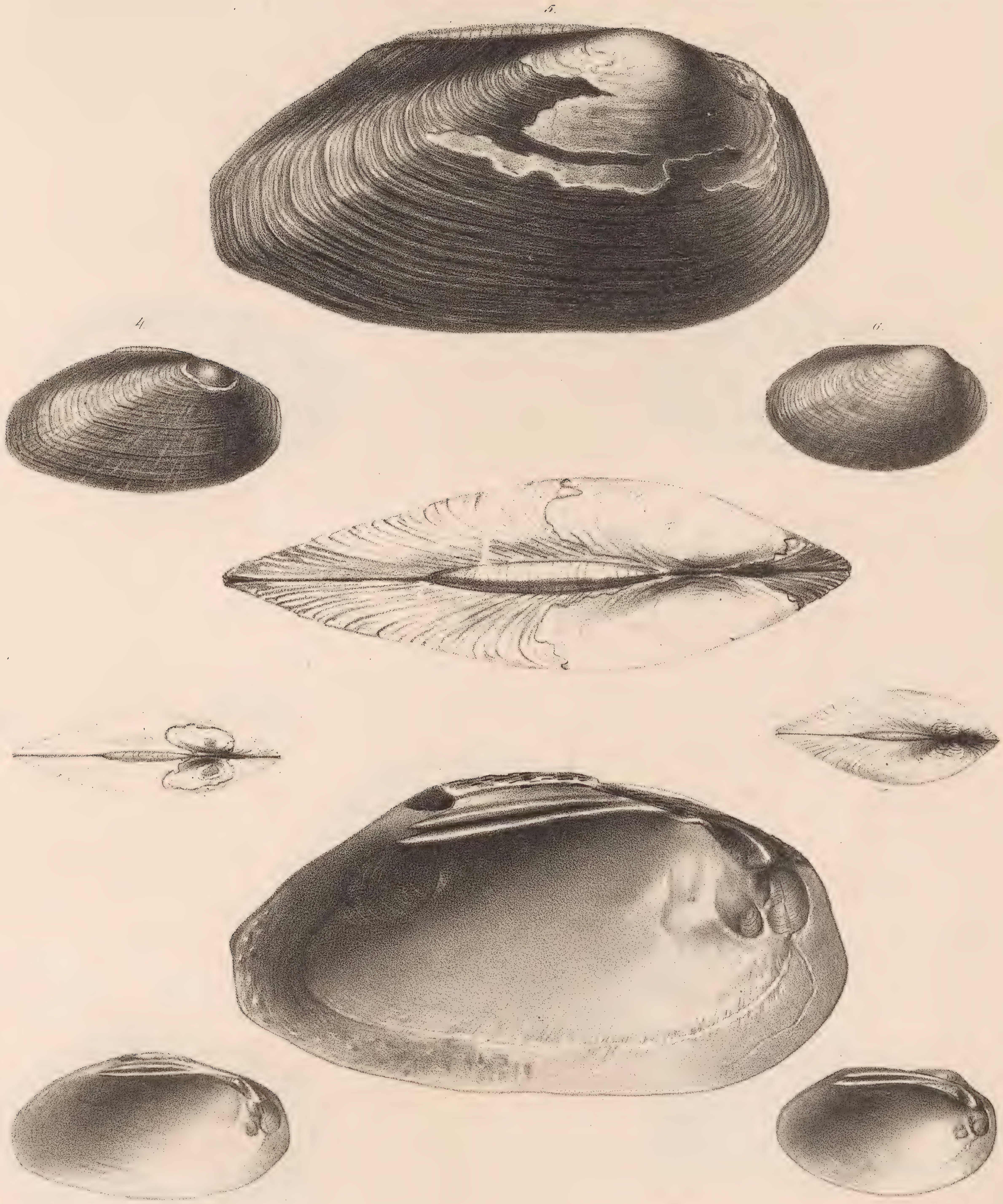


1. *Unio amygdalum.*
2. *Unio Buckleyi.*
3. *Unio minor.*

From Nature & on Stone by French

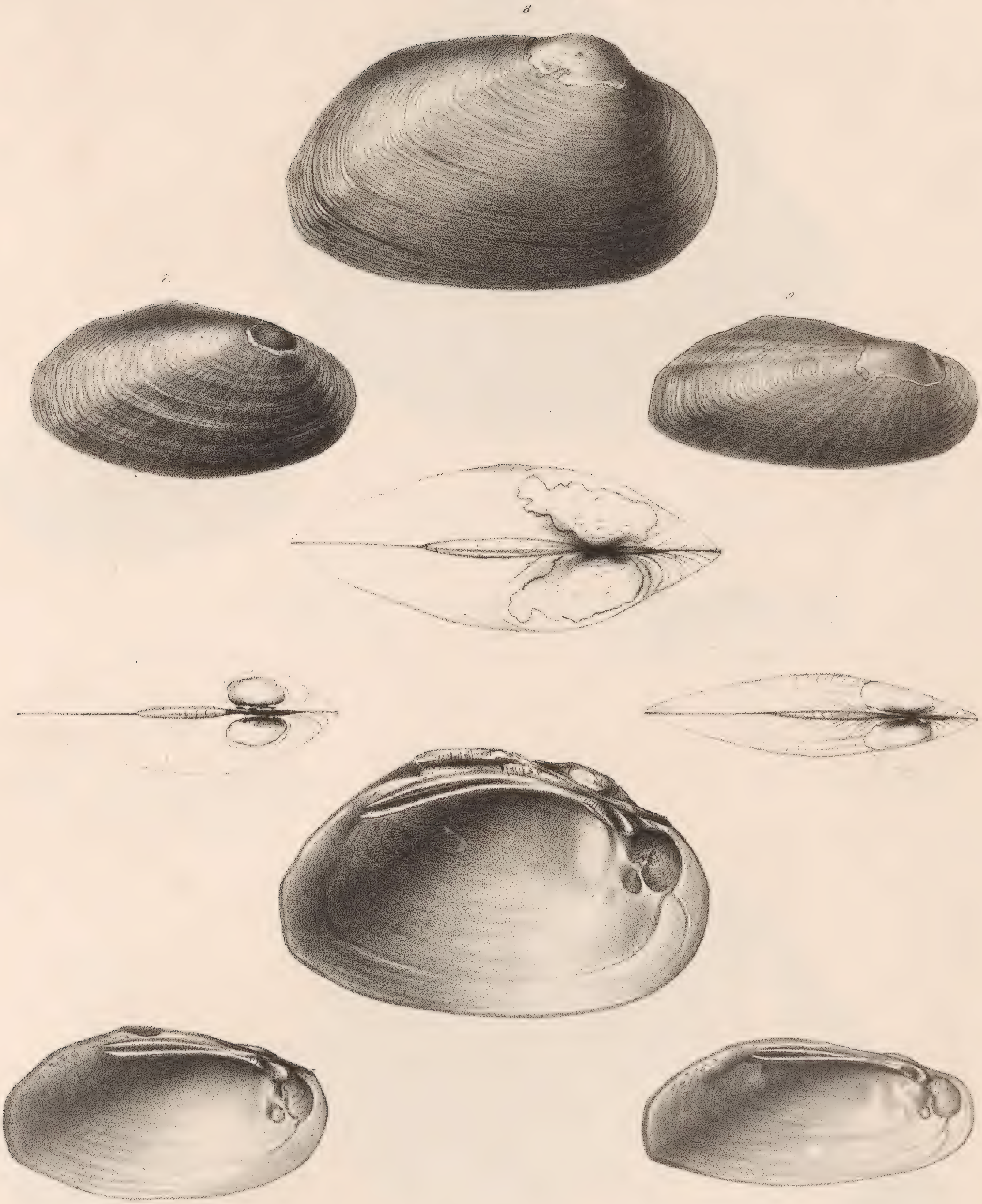
Sinclair's Lith. Phil^a



4. *Unio fuscatus.*
5. *Unio Buddianus.*
6. *Unio trossulus.*

From Nature & on Stone by French

[illegible] Phil



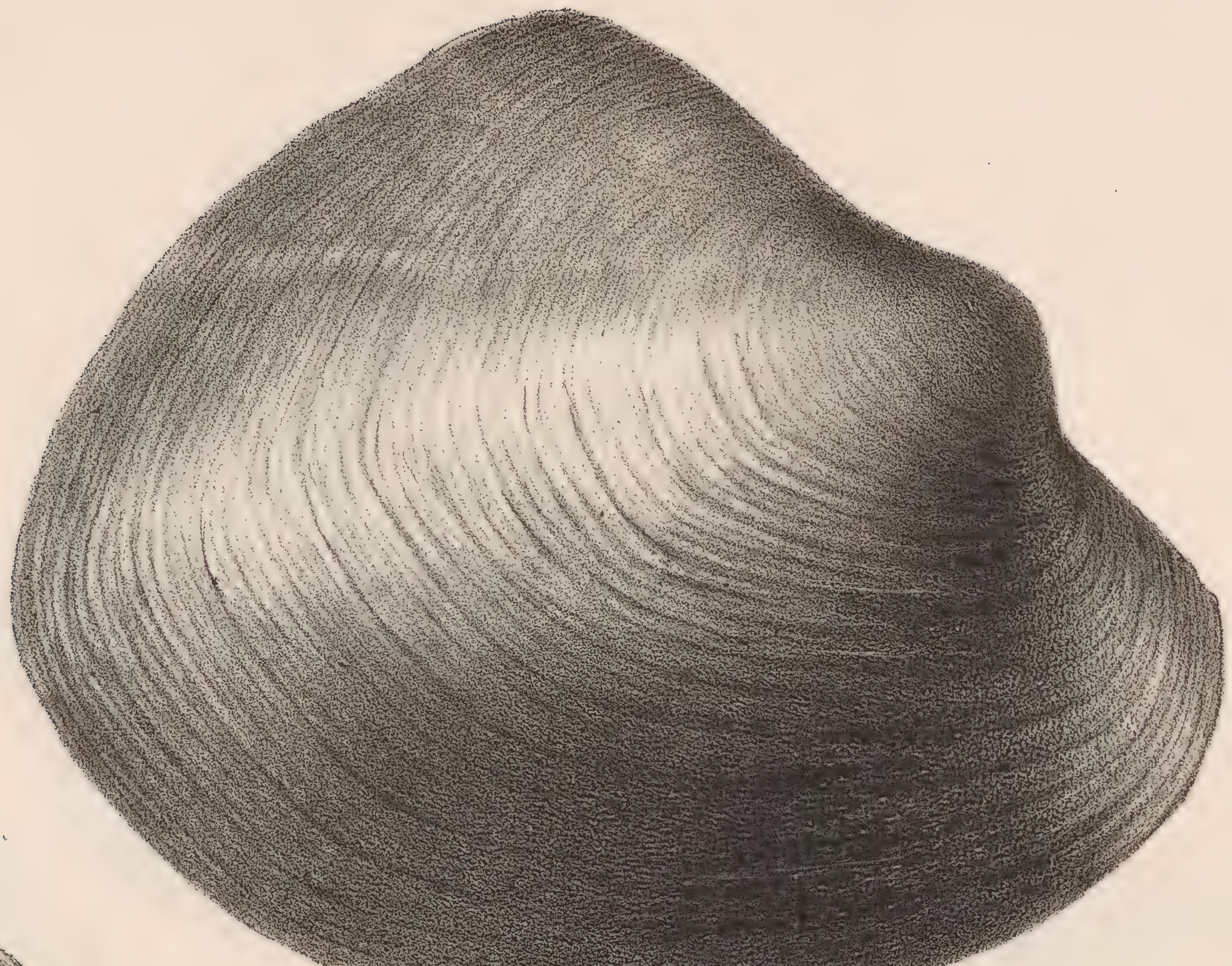
7. *Unio occultus.*
8. *Unio Monroensis.*
9. *Unio aheneus.*

From Nature & on Stone by French.

Sinclair's Lith. Phila

Trans. Am. Phil. Soc. 2d Series Vol. 9. Pl. 42.

11.



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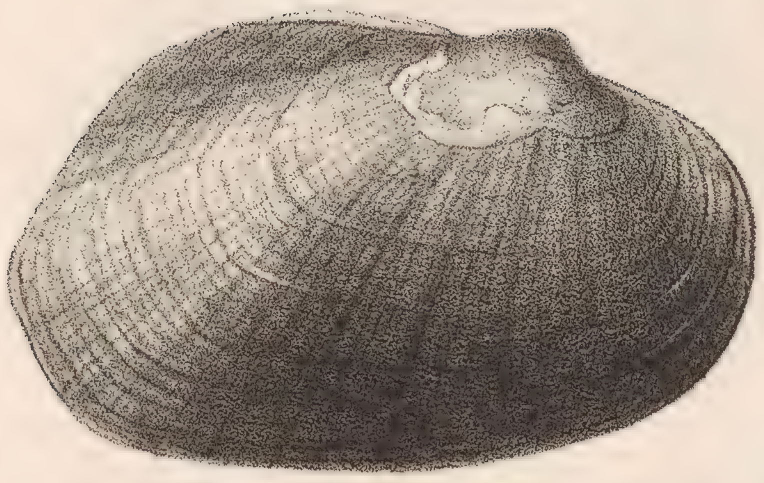

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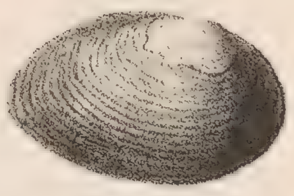
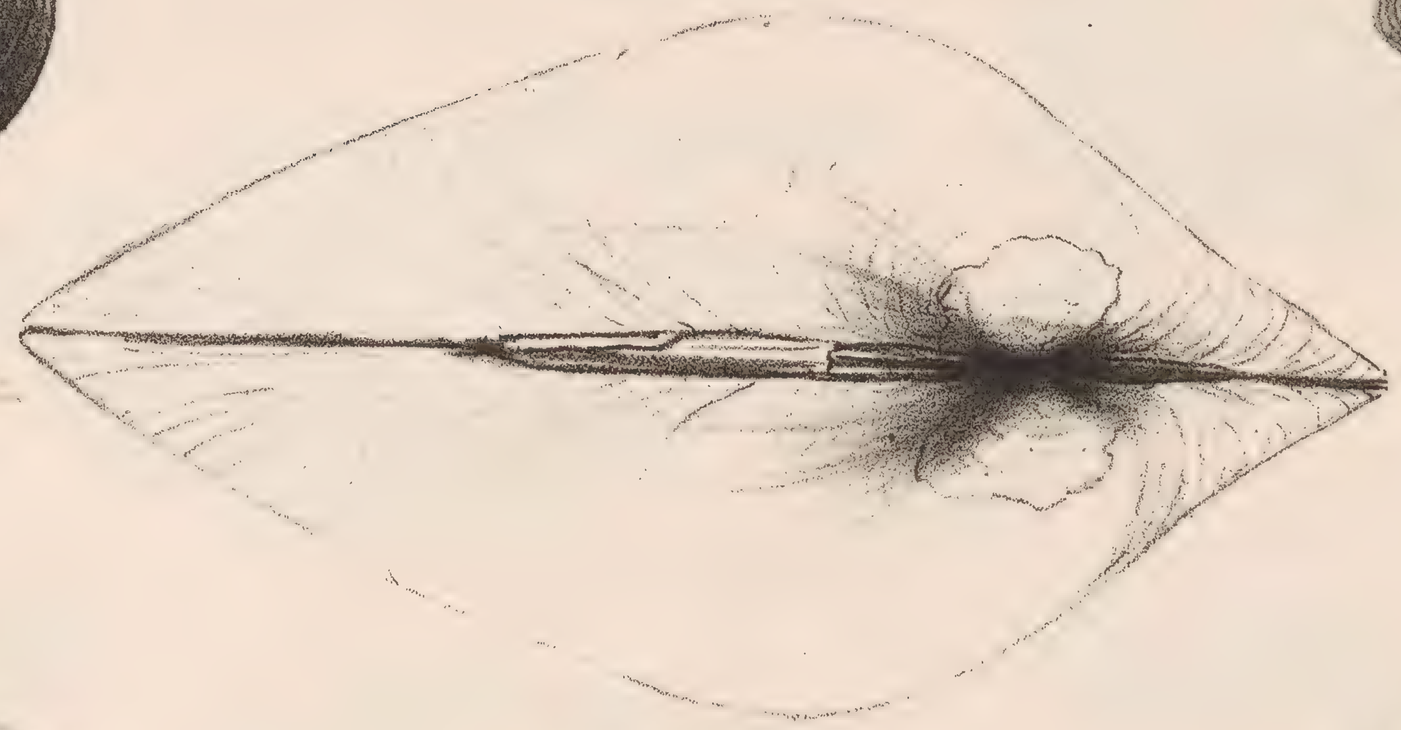
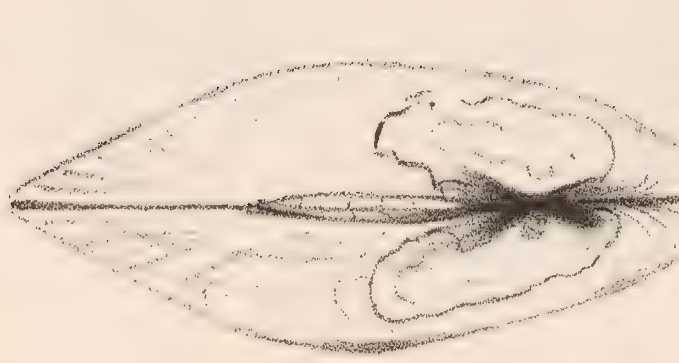
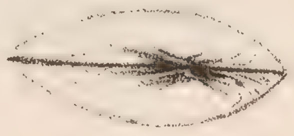
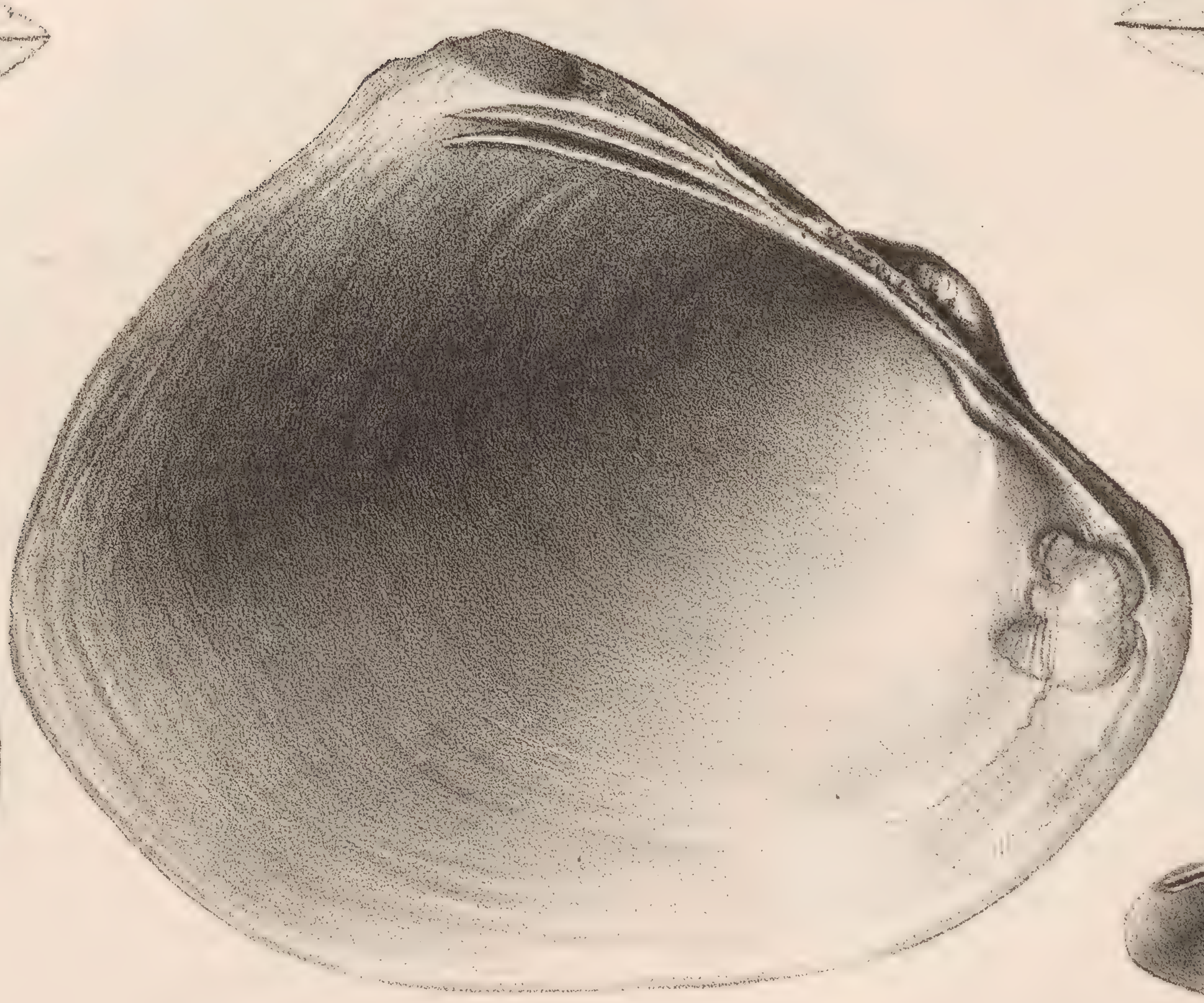
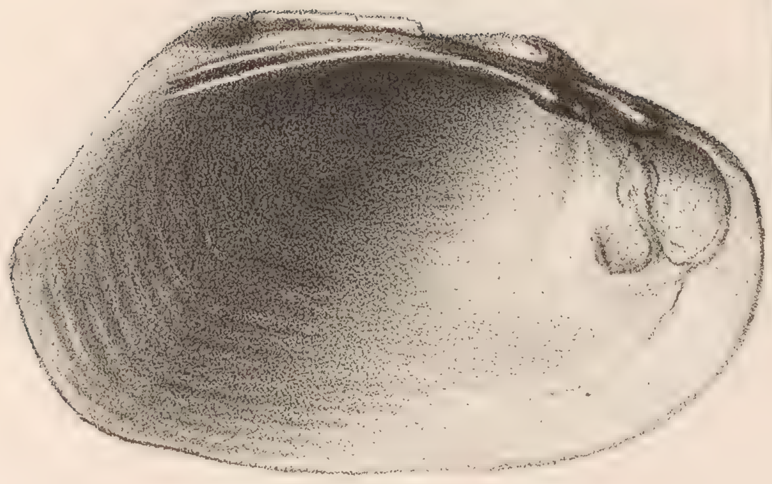


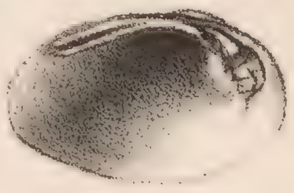








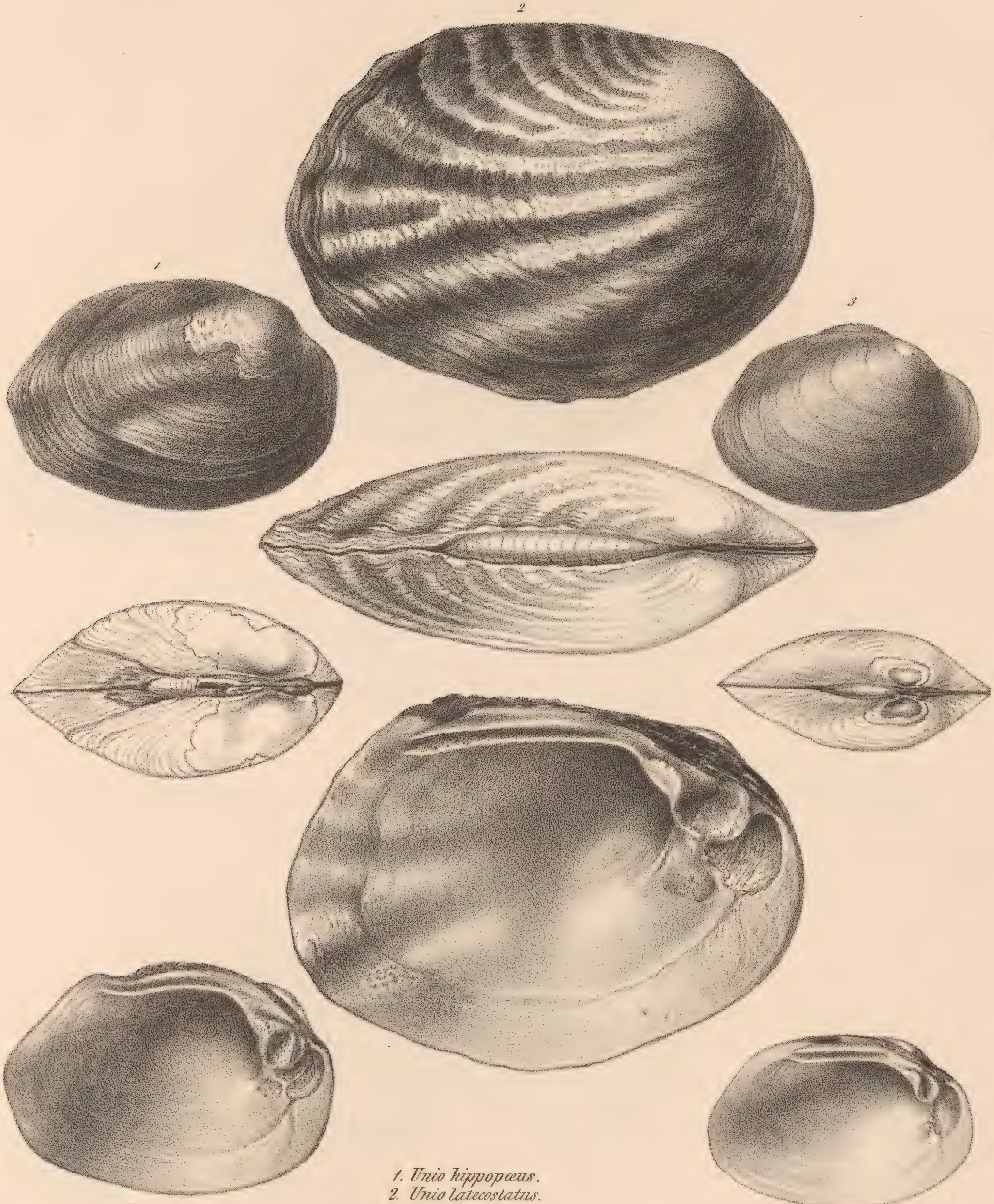




10. *Unio neglectus*
11. *Unio superbus.*
12. *Unio aratus.*

From Nature & on Stone by Prev. L

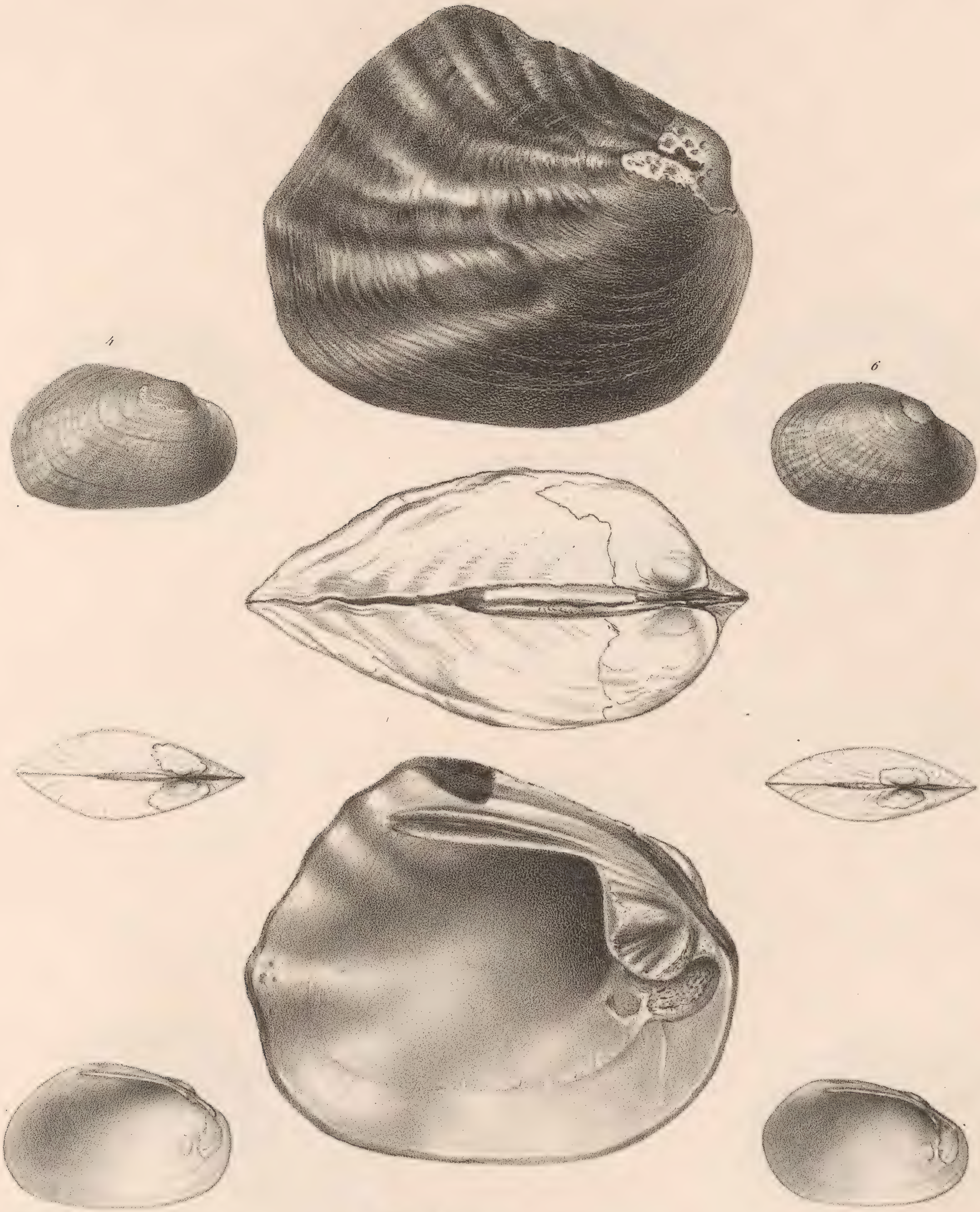
Sinclair's Lith. Phil^a



1. Unio hippopœus.
2. Unio latecostatus.
3. Unio utriculus.

From Nature on Stone by French.

Sinclair's Lith. Phil^a



4. *Unio hyalinus.*
5. *Unio atrocostatus.*
6. *Unio pellucidus*

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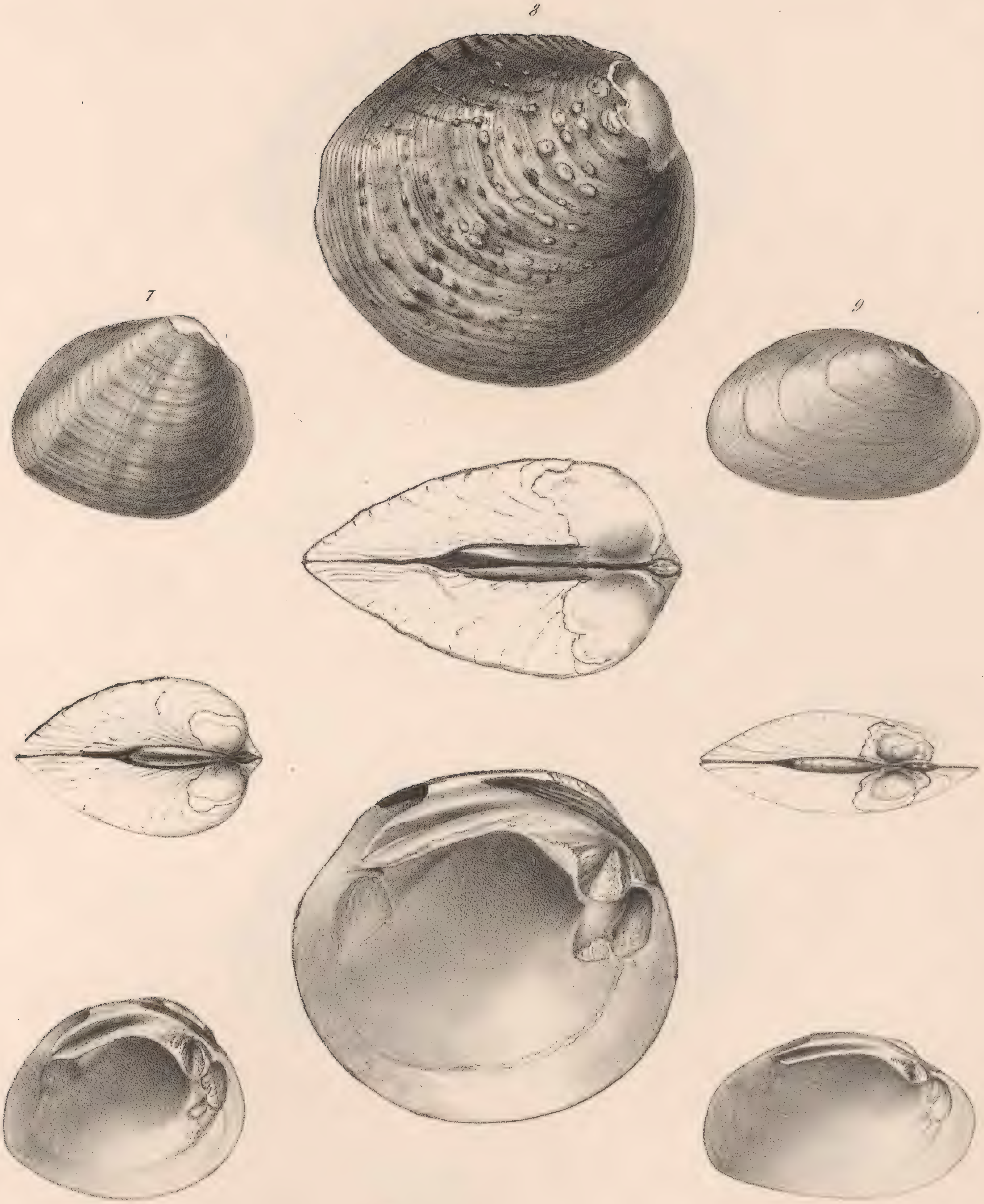
Sinclair's Lith. Phil^a



7. *Unio tumescens.*
8. *Unio pernodosus*
9. *Unio flavescens.*

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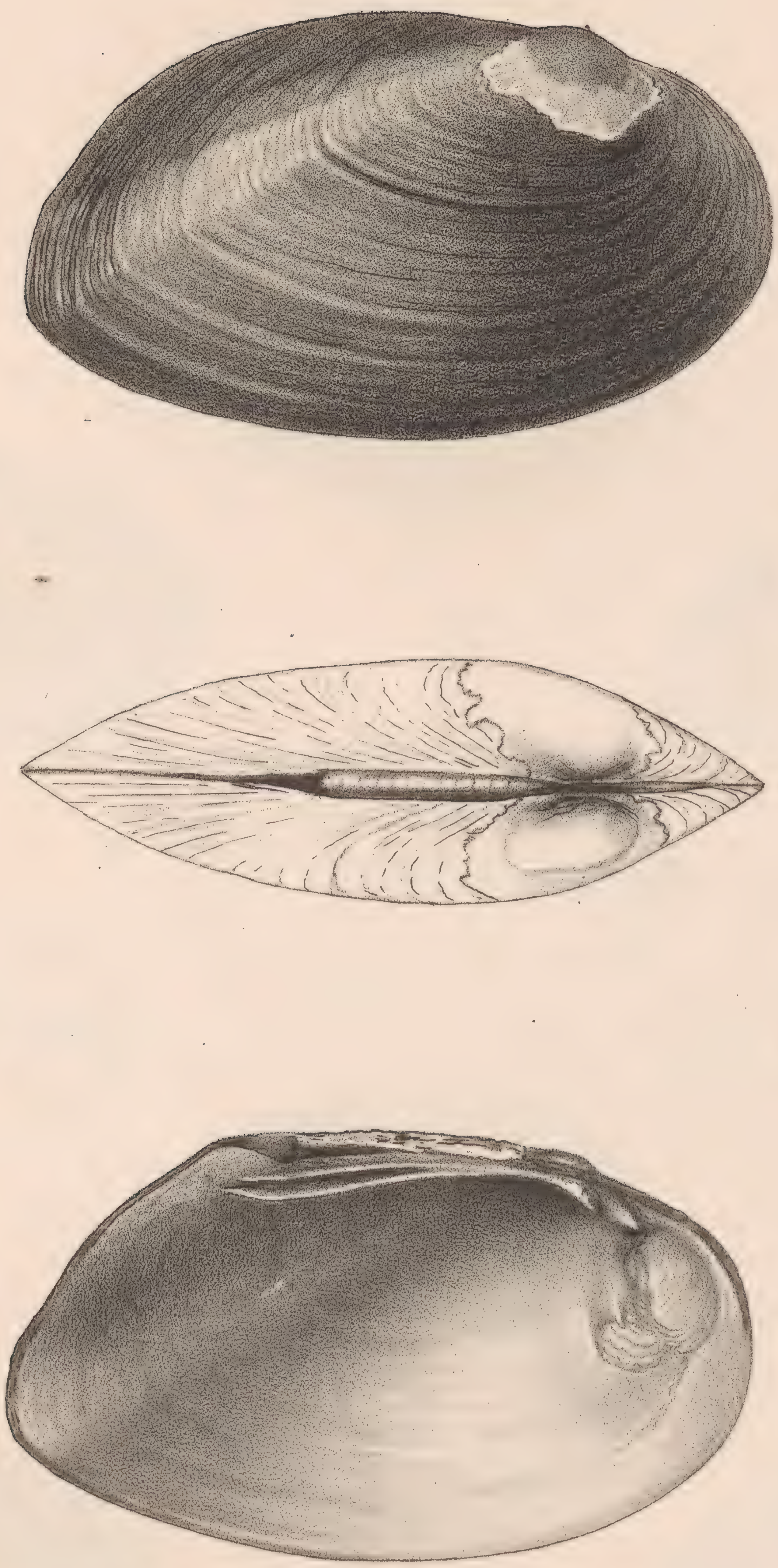
Sinclair's Lith. Phil^a

Trans. Am. Phil. Soc. 2d Series, Vol. 10 Pl. 4.

11



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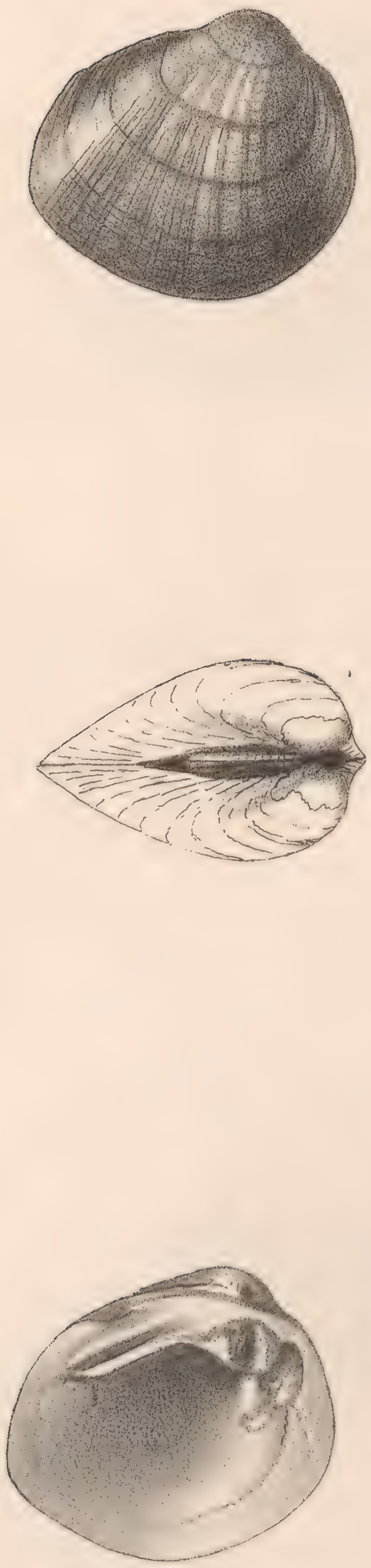

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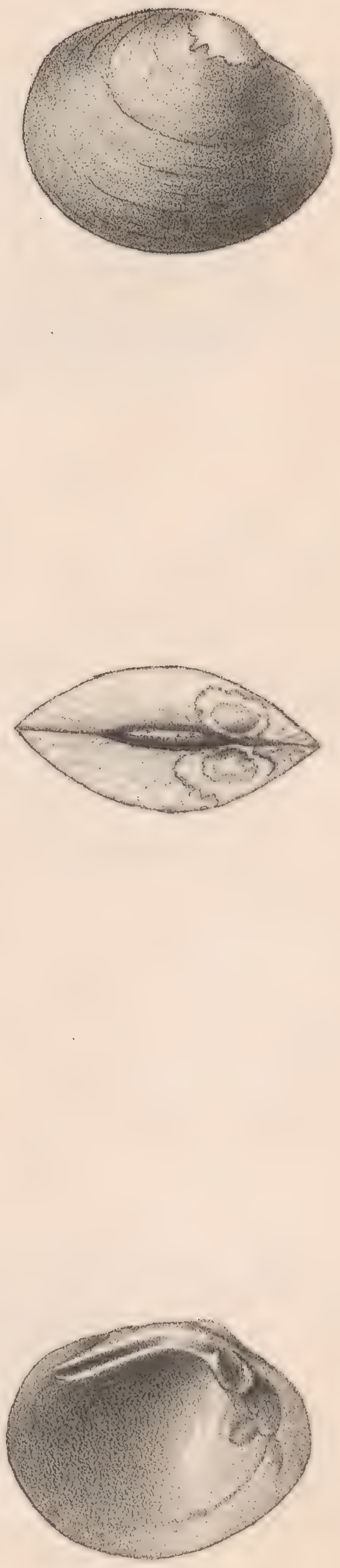
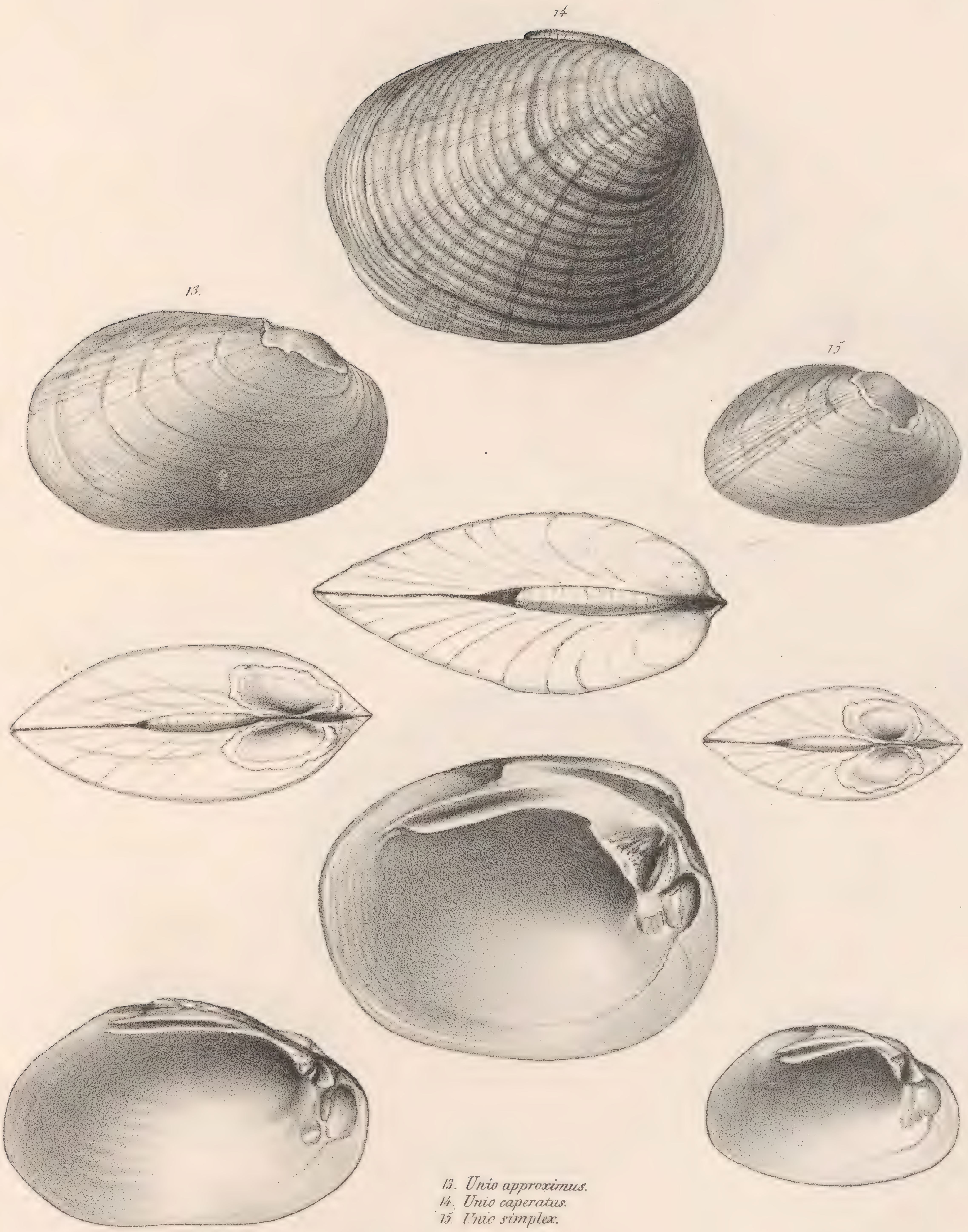


10 *Unio fulgidus.*
11 *Unio symmetricus.*
12 *Unio unicolor.*

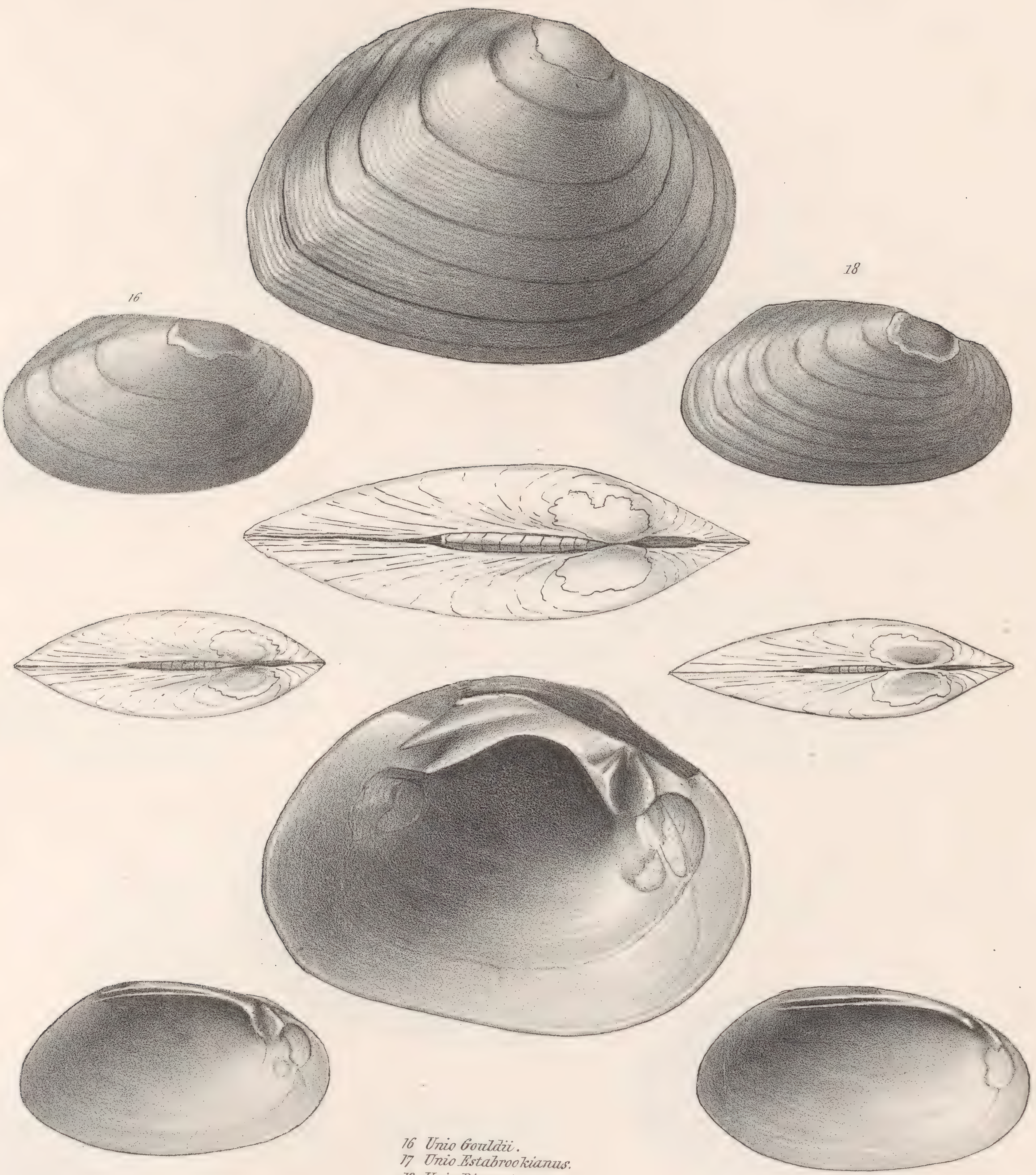
From Nature on Stone by French.

Sinclair's, Lith. Phil.a



13. *Unio approximus.*
14. *Unio caperatus.*
15. *Unio simplex.*

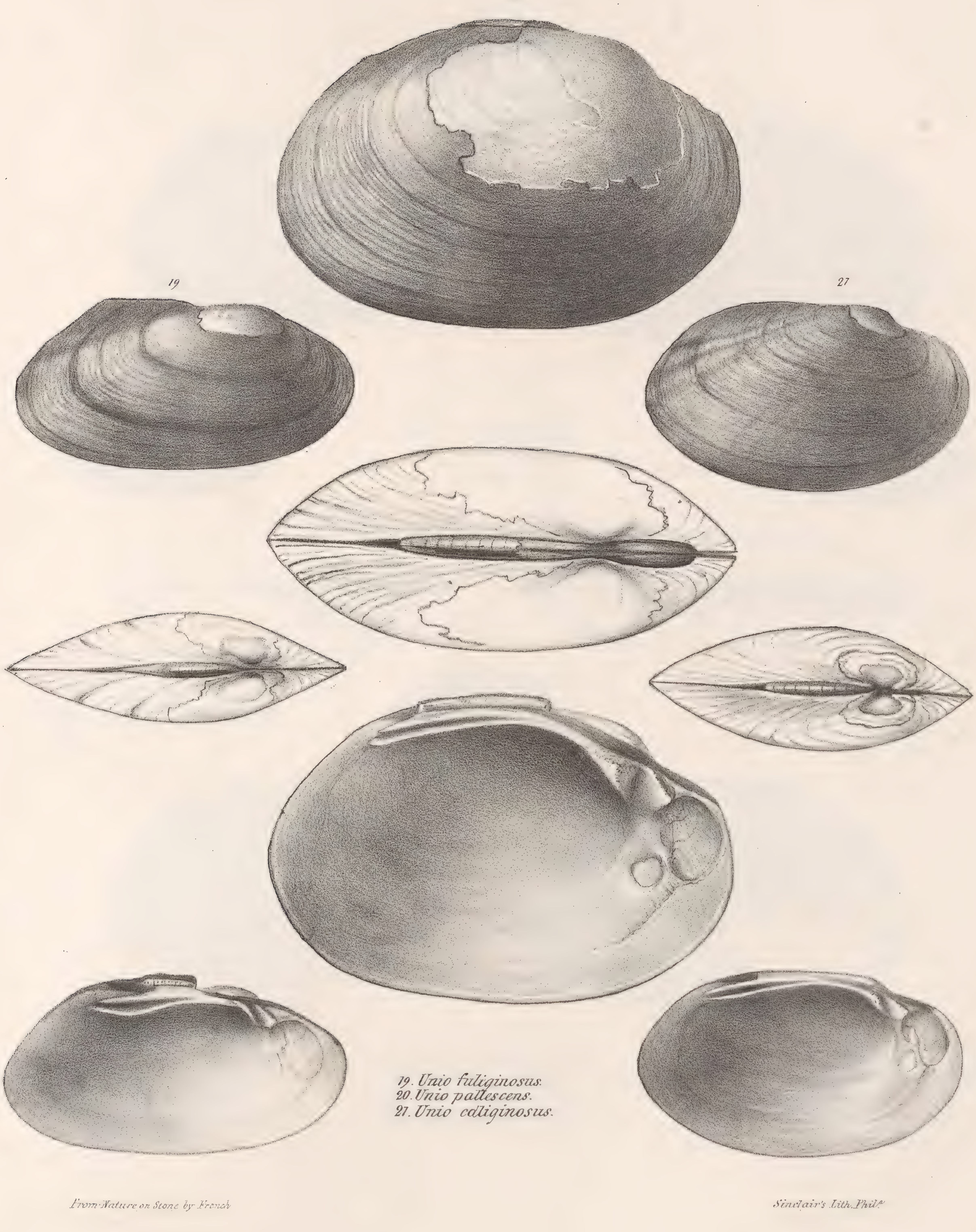
From Nature on Stone by French
Sinclair's, Lith. Phil^a



16 *Unio Gouldii.*
17 *Unio Estabrookianus.*
18 *Unio Binneyi.*

From Nature on Stone by French.

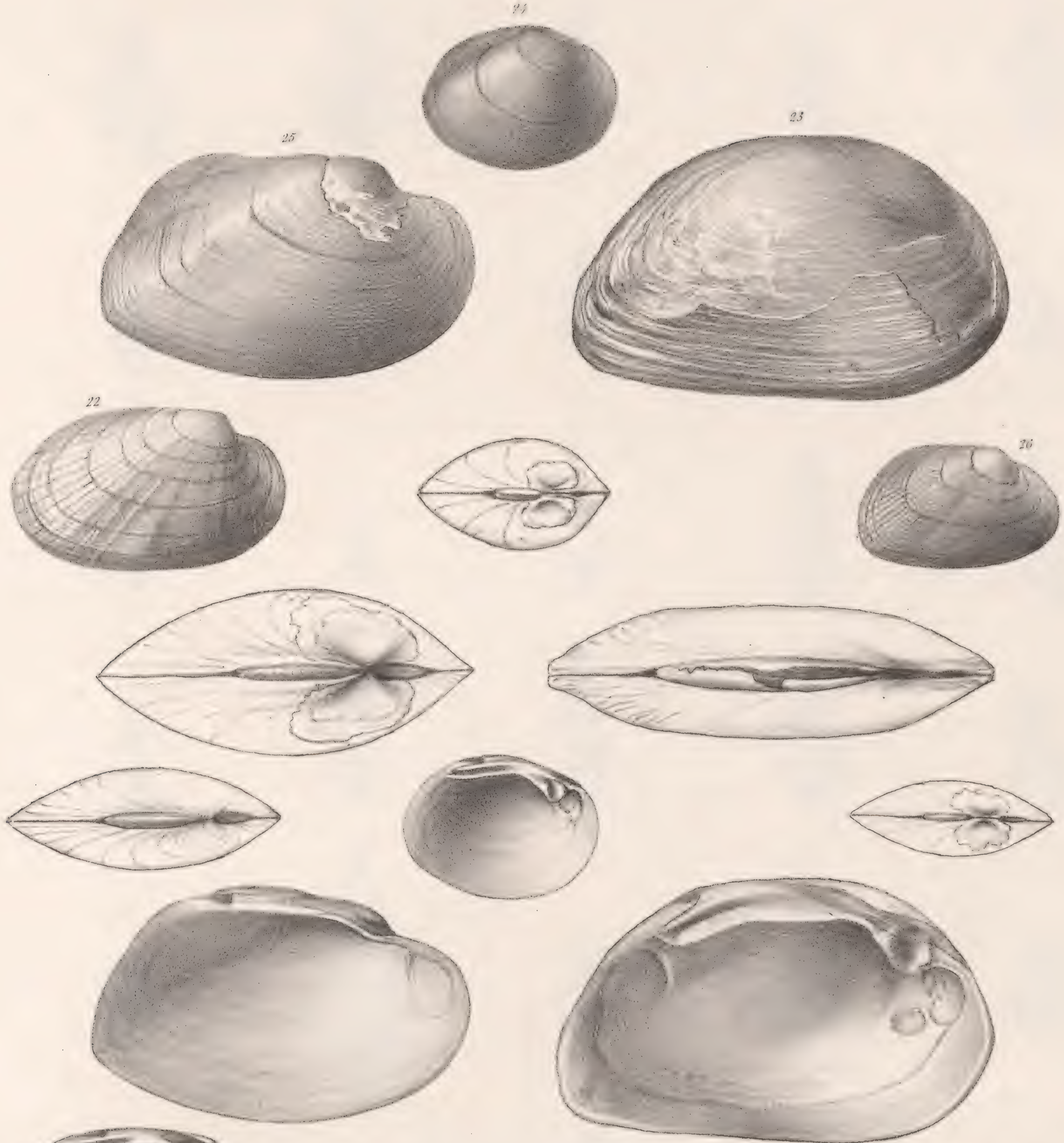
Sinclair's, Lith Phila

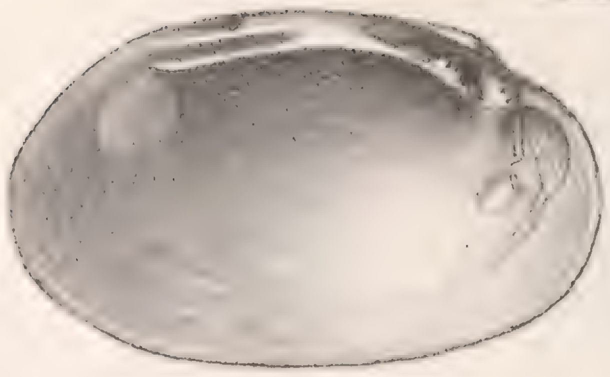


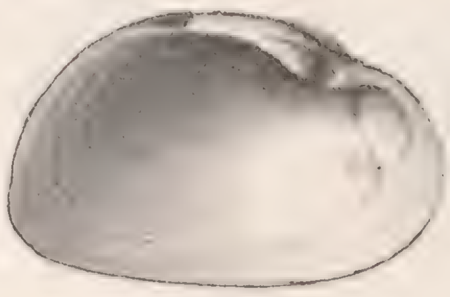
19. *Unio fuliginosus.*
20. *Unio pallescens.*
21. *Unio caliginosus.*

From Nature on Stone by French

Sinclair's Lith. Phila





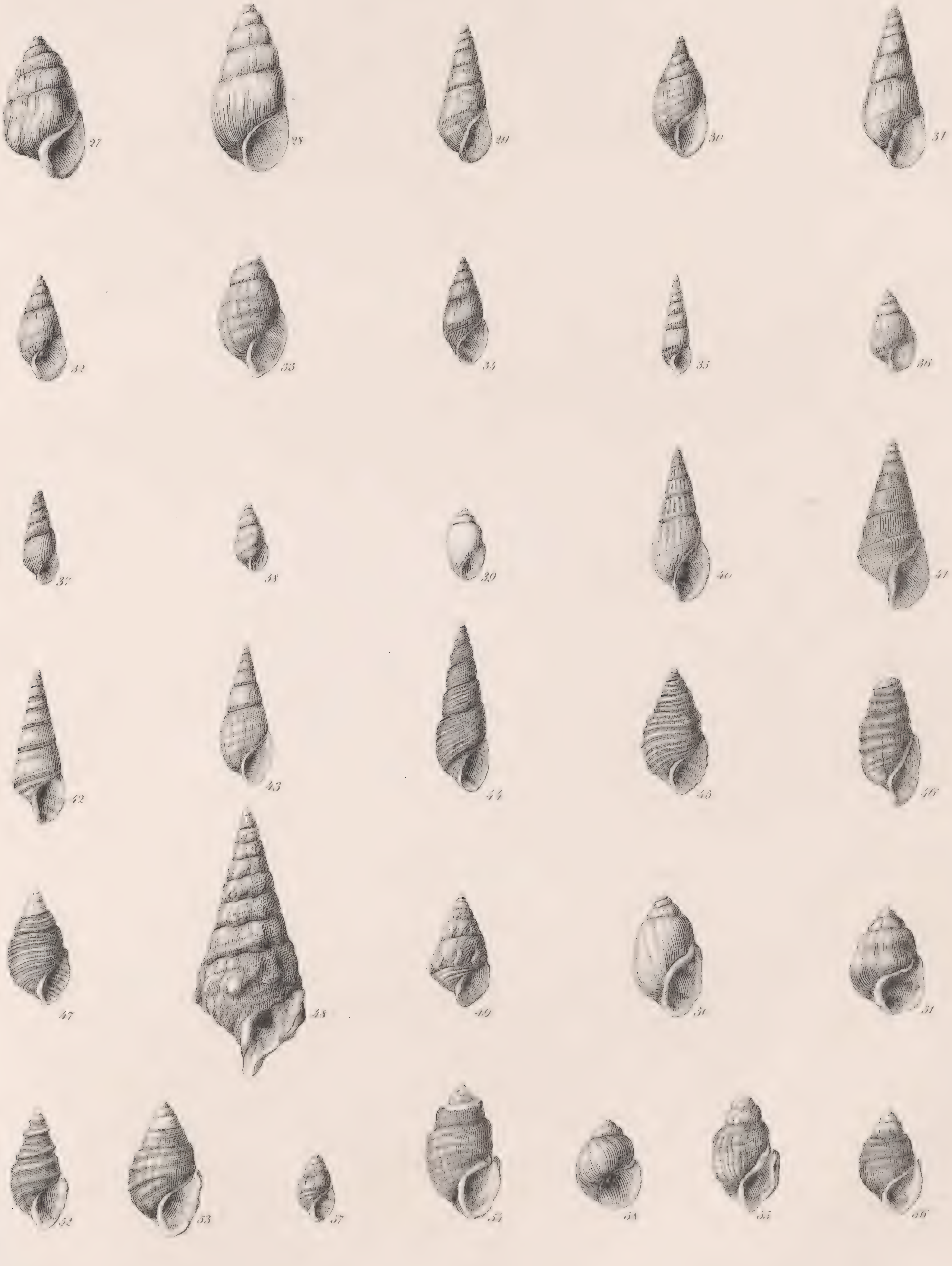


22. Unio spatulatus.
23. Unio compressissimus
24. Unio pulvinatus
25. Anodonta tetragona.
26. Margaritana minor.

From Nature on Stone by French

Sinclair's Lith. Phil^a

MELANIA &c.



27 *M. solida*
28 . . *Proteus*
29 . *lugubris*
30 . . *torta*
31 . *spurca*
32 . . *abrupta*
33 . . *basalis*
34 . . *modesta*
35 *M. Haleiana*
36 . . *pumila*
37 . . *Alexandrensis*
38 . . *ovoidea*
39 . . *auriculæformis*
40 . . *carino-costata*
41 . . *filum*
42 . *spinalis*
43 *M. pallescens*
44 . . *Buddii*
45 . . *harpa*
46 . . *arctata*
47 . . *crebré-striata*
48 . . *nobilis*
49 . . *pernodosa*
50 *A. squalida*
51 *A. tintinnabulum*
52 *S. pagoda*
53 . . *Buddii*
54 . . *Babylonicum*
55 . . *constrictum*
56 . . *funiculatum*
57 . . *laciniatum*
58 *P. Haleiana*

Drawn & lith by Köllner

[illegible] fig. = fig. 43!

Th. Sinclair's lith. press

OBSERVATIONS

ON THE

GENUS UNIO,

&c.

OBSERVATIONS

ON THE

GENUS UNIO,

TOGETHER WITH

DESCRIPTIONS OF NEW SPECIES IN THE FAMILIES UNIONIDÆ, COLIMACEA AND MELANIANA.

READ BEFORE THE AMERICAN PHILOSOPHICAL SOCIETY, AND ORIGINALLY
PUBLISHED IN ITS TRANSACTIONS.

BY

ISAAC LEA,

MEMBER OF THE AM. PHIL. SOC.; OF THE ACAD. OF NAT. SCIENCES OF PHILADA.:
OF THE ZOOL. SOC. OF LONDON; OF THE IMPERIAL
SOC. OF MOSCOW, &C. &C.

WITH NUMEROUS PLATES.

VOL. V.

PHILADELPHIA:
PRINTED FOR THE AUTHOR.

TO MAJOR JOHN LE CONTE,

My Dear Friend:

Will you permit me in this way to acknowledge my obligations to your great kindness and liberality, in furnishing me, during so many years, with numerous new species of our fluviatile molluscs? The pains you have always taken in bringing to light new forms, may readily be understood by looking through this and my previous volumes on this interesting subject. I feel grateful for the untiring assiduity you have given to promote my objects, and therefore it is with peculiar pleasure that I present you with this volume.

Truly and
Faithfully yours,
ISAAC LEA.

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Do of a New Species of Helix from California, Read March 5, 1852, . . 59

NEW FRESH WATER AND LAND SHELLS.*

It is now some years since I presented to this society a continuation of my discoveries of new forms from the fresh waters and soil of the United States. Since that period, owing to the kindness of many valued friends, I have been enabled to get together a much larger number by far, than could have been anticipated. These have come chiefly from localities hitherto little examined, and which have produced new species more or less interesting. It will be observed that many are from Dr. Barratt, of Abbeville District, S. C., from Mr. Tuomey, of Alabama, Dr. Hale, of Alexandria, Louisiana, Prof. Powell, of Memphis, Major Le Conte, who procured them from Florida and Georgia, President Estabrook, of Knoxville, Tenn., Mr. Joseph Clark, of Cincinnati, Mr. C. M. Wheatley, of New York, and other kind friends. To them all, I return my sincere thanks for their liberality, and I trust that they will be induced not to flag in the cause of American science, but rather to be encouraged in the development of these new organic forms, which, in this branch of Zoology exist in such vast profusion, and in so extended a number of species, in the United States.

Notwithstanding the vast number of well characterized species of the Family *Unionidæ*, (as there are also in the Family *Melaniana*,) there are continually new and distinct forms brought to our notice, which well deserve the attention of the American Zoologist.

I am aware that many persons doubt the existence of so extended a production of species, but this arises from the want of a knowledge of them, closely cultivated and analytically examined. An organic form, instituted by nature must be recognised as distinct, for it will remain in a state of autonomy to the end of its term. It is the duty of the zoologist to bring to the investigation an eye practised in discrimination, and a judgment experienced in analysis, as well as also an honest intention of purpose, that he may give the best and most accurate results to his investigations.

[* Read before the American Philosophical Society, March 5, 1852, and published in the Transactions, Vol. X., New Series.]

Unio sordidis. Pl. XII. Fig. 1.

Testâ lævi, ellipticâ, subcompressâ, inequilaterali, posticè rotundatâ; valvulis subcrassis; natibus prominulis; epidermide rufo-fuscâ, striatâ; dentibus cardinalibus parvis; lateralibus longis subrectisque; margaritâ albâ et iridescente.

Shell smooth, elliptical, rather compressed, inequilateral, rounded behind; valves rather thick; beaks slightly prominent; epidermis reddish-brown, striate; cardinal teeth small; lateral teeth long and nearly straight; nacre white and iridescent.

Hab. Abbeville District, S. C. J. P. Barratt, M. D.
My cabinet.

Diam. .8, Length 1.3, Breadth 2.4 inches.

Shell smooth, elliptical, rather compressed, inequilateral, rounded before and behind; substance of the shell rather thick, thinner behind; beaks slightly prominent and nearly terminal; ligament long and thick; epidermis reddish-brown, obtusely rayed, with obscure equidistant marks of growth; umbonial slope rounded; cardinal teeth very small and striate, single in the right and double in the left valve; lateral teeth long and nearly straight, separated from the cardinal tooth; anterior cicatrices distinct; posterior cicatrices confluent; dorsal cicatrices nearly in the centre of the cavity of the beak, under the cardinal tooth; cavity of the shell shallow; cavity of the beaks very shallow and subangular; nacre white and iridescent.

Remarks.—A single imperfect specimen only of this was received by me, and I hesitated for some time to describe it, in hopes of getting more to determine its characters better, It is certainly very much like the widely distributed *U. complanatus;* but it seems to me to differ in its form, being more rounded behind, more rounded over the umbones, and more compressed over the umbonial slope.

Unio Gibbesianus. Pl. XII. Fig. 2.

Testâ lævi, ellipticâ, subcompressâ, inequilaterali, posticè subbiangulatâ; valvulis subcrassis; natibus prominentibus; epidermide luteo-fuscâ, radiatâ, striatâ; dentibus cardinalibus parvis, tripartitis; lateralibus prælongis subrectisque; margaritâ albâ et iridescente.

Shell smooth, elliptical, somewhat compressed, inequilateral, subbiangular behind; valves rather thick; beaks prominent: epidermis yellowish-brown, radiated, striated; cardinal teeth small; lateral teeth very long and nearly straight; nacre white and iridescent.

Hab. Abbeville District, S. C. Louis R. Gibbes, M. D.
My cabinet.

Diam. 1, Length 1.5, Breadth 2.8 inches.

Shell smooth, elliptical, somewhat compressed, inequilateral, rounded before and subbiangular behind; substance of the shell thick; beaks prominent and submedial; ligament long and very thick; epidermis yellowish-brown, obscurely radiated, roughly striate near the margin, smooth on the umbones, marks of growth nearly equidistant and distinct; umbonial slope rounded; cardinal teeth small, slightly elevated, pointed and tripartite; lateral teeth very long, nearly straight and thickened at the posterior end, separated from the cardinal tooth; anterior cicatrices distinct; posterior cicatrices distinct; dorsal cicatrices nearly in the centre of the cavity of the beaks, on the inferior posterior part of the cardinal tooth; palleal cicatrices distinctly impressed; cavity of the shell shallow, cavity of the beaks shallow and subangular; nacre white and iridescent.

Remarks.—It is to be particularly regretted that a single specimen only of this species should have been received from Dr. Gibbes. The cardinal teeth in *both valves are tripartite.* They are distinctly divided into three lobes, of nearly equal size and form. This is so unique that I have inserted it with some hesitation as a permanent character, tripartition being so unprecedented. It may possibly be accidental. Should other specimens prove this form to be persistent, this species will present an anomaly peculiarly its own. The lateral teeth are, as usual, single in the right and double in the left valve; but the terminal inferior portion is remarkably enlarged and thickened in the latter valve, so as to run beyond the superior portion. The marginal portion of the disc is remarkably furnished with imbricate epidermal matter. It has somewhat the outline of *U. complanatus*, but may easily be distinguished from that species by its being more elevated in the beaks, in its imbricate margin, and in the form of the teeth.

UNIO PERSTRIATUS. Pl. XII. Fig. 3.

Testâ lævi, valdè transversâ, valdè compressâ, subemarginatâ, valdè inæquilaterali, posticè subbiangulatâ; valvulis tenuibus; natibus parvis, vix prominentibus, ad apicem undulatus; epidermide luteo-fuscâ, perstriatâ; dentibus cardinalibus parvis, obliquis; lateralibus prælongis rectisque; margaritâ albâ et iridescente.

Shell smooth, very transverse, very much compressed, subemarginate, very inequilateral, subbiangular behind; valves thin; beaks small, scarcely prominent, undulated at the tip; epidermis yellowish-brown, very much striated; cardinal teeth small, oblique; lateral teeth very long and straight; nacre white and iridescent.

Hab. Abbeville District, S. C. J. P. Barratt, M. D.
My cabinet and cabinet of Dr. Barratt.

Diam. .5, Length 1, Breadth 2.3 inches.

Shell smooth, very transverse, very much compressed, slightly emarginate, very inequilateral, subbiangular behind, obtusely rounded before, posterior slope wide and flattened; substance of the shell thin; beaks placed near to the anterior margin and furnished with minute undulations at the tip, scarcely prominent, but rather pointed; ligament long and thin; epidermis yellowish-brown, with numerous imbricate striæ covering nearly the whole of the disks, and with only one or two distant marks of growth; umbonial slope biangular and flattened; cardinal teeth small, oblique, double in the right and single in the left valve; lateral teeth very long, straight and thickened at the posterior ends; anterior cicatrices distinct; dorsal cicatrices placed under the plate between the cardinal and lateral teeth; cavity of the shell exceedingly shallow; cavity of the beaks very shallow and rounded; nacre white and iridescent.

Remarks.—Dr. Barratt sent me four specimens of this species, which may easily be distinguished by its peculiar striated epidermis, and its compressed form. It scarcely belongs to that large group of which the *U. complanatus* is the type, but certainly borders on it. The nacre of three of the specimens is white, slightly tinged with blue. The fourth specimen is purplish. The lines of growth are very remarkable, being few and very distant, neither of the specimens having more than two, and two of them having only one line of growth. In outline it closely resembles *U. strigosus*, (Nobis,) but is a rougher shell, and thinner.

UNIO TUOMEYI. Pl. XIII. Fig. 4.

Testâ lævi, ellipticâ, subcompressâ; valvulis subcrassis; natibus vix prominulis; epidermide luteo-fuscâ; dentibus cardinalibus subgrandibus; lateralibus longis, subcrassis curvisque; margaritâ iridescente, colore salmonis tinctâ.

Shell smooth, elliptical, rather compressed; valves somewhat thick; beaks slightly prominent; epidermis yellowish-brown; cardinal teeth rather large; lateral teeth long, rather thick and curved; nacre iridescent, salmon coloured.

Hab. Abbeville District, S. C. J. P. Barratt, M. D.

My cabinet and cabinets of Dr. Barratt and Mr. Tuomey.

Diam. .8, Length 1.3, Breadth, 2.6 inches.

Shell smooth, elliptical, rather compressed, subangular behind, rounded before, slightly angular on the posterior slope; substance of the shell somewhat thick; beaks slightly prominent, with minute undulations at the tip; ligament rather long and thin; epidermis yellowish-brown, shining, with indistinct rays on the posterior portion; cardinal teeth rather large, somewhat pointed, single in the right and double in the left valve; lateral teeth long, curved and thickened at the posterior end; anterior cicatrices distinct; posterior cicatrices confluent; dorsal cicatrices placed in the cavity of the beaks; cavity of the shell shallow; cavity of the beaks small and slightly angular; nacre iridescent and salmon coloured.

Remarks.—There were seven specimens of this species among the shells sent to me by Dr. Barratt and Mr. Tuomey. They are of different ages, and nearly allied to *U. Barrattii*, herein described, but may be distinguished by being more compressed and less transverse. All of the seven specimens before me have salmon coloured nacre, except one, which is mixed with a tinge of purple. Other specimens may likely be found with white and purple nacre.

UNIO BARRATTII. Pl. XIII. Fig. 5.

Testâ lævi, transversâ, subinflatâ; valvulis subcrassis; natibus vix prominulis; epidermide virido-fuscâ; dentibus cardinalibus grandibus; lateralibus longis, subcrassis subcurvisque; margaritâ vel albâ vel purpurâ vel colore salmonis tinctâ.

Shell smooth, transverse, slightly inflated; valves somewhat thick; beaks slightly prominent; epidermis greenish-brown; cardinal teeth large; lateral teeth long, somewhat thick, and rather curved; nacre white-purple or salmon coloured.

Hab. Abbeville District, S. C. J. P. Barratt, M. D.

My cabinet and cabinets of Dr. Barratt and Mr. Tuomey.

Diam. .8, Length 1.3, Breadth 2.9 inches.

Shell smooth, transverse, slightly inflated, angular behind and rounded before, angular on the posterior slope, subcarinate on the posterior dorsal margin; substance of the shell somewhat thick; beaks slightly prominent, with minute undulations at the tip; ligament rather long and thin; epidermis greenish, clouded with brown, slightly polished, with rather minute, indistinct rays; cardinal teeth large, pointed, single in the right and double in the left valve; lateral teeth long, somewhat curved and thickened at the posterior end; anterior cicatrices distinct; posterior cicatrices confluent; dorsal cicatrices placed in the centre of the cavity of the beaks; cavity of the shell shallow; cavity of the beaks small and rather angular; nacre white, purplish, or delicately salmon coloured and iridescent.

Remarks.—Among many interesting species—several of which were new—received from Dr. Barratt and Mr. Tuomey, were four of this species. One is an adult, the other three are young. It has somewhat the outline of *U. rectus*, Lam., and has on the exterior a resemblance to *U. nasutus*, Say, but is a thicker shell. It is not so cylindrical as the *rectus*, nor so wide. It is allied to *U. Tuomeyi*, but is a wider species.

Unio decoratus. Pl. XIII. Fig. 6.

Testâ oblongâ, valdè compressâ, inæquilaterali; valvulis subtenuibus; natibus prominulis, compressis, ad apices undulatis; epidermide luteo-viridi, densissimè radiatâ; dentibus cardinalibus parvis, lamellatis; lateralibus parvis rectisque; margaritâ albâ et iridiscente.

Shell oblong, much compressed, inequilateral; valves rather thin; beaks slightly prominent, compressed, undulated at the beaks; epidermis yellowish-green, closely radiated; cardinal teeth small, lamellar; lateral teeth small and straight; nacre white and iridescent.

Hab. Abbeville District, S. C. Dr. Barratt and Mr. Tuomey.
My cabinet and cabinets of Dr. Barratt and Mr. Tuomey.

Diam. .8, Length 1.4, Breadth 2.3 inches.

Shell oblong, much compressed; posterior dorsal margin carinate; substance of the shell rather thin, slightly thickened before; beaks slightly prominent, compressed and crowded with double concentric undulations; ligament very small, thin, nearly concealed within the valves; epidermis yellowish-green, with numerous capillary rays over nearly the whole disk; cardinal teeth rather small, lamellar, single in the right and double in the left valve; lateral teeth rather short, straight and acicular; anterior cicatrices distinct; posterior cicatrices confluent; dorsal cicatrices situated in the point of the cavity of the beaks; cavity of the shell rather shallow; cavity of the beaks small and angular; nacre white, rather brilliant and iridescent.

Remarks.—I owe to the kindness of Dr. Barratt and Mr. Tuomey four specimens of this interesting species, which draws more attention from the fact of its forming a natural link with a highly interesting species which I described and figured in Vol. III., Trans. Am. Phil. Soc., Pl. XII. Fig. 22, under the name of *Symphynota* (*Unio*) *compressa*, afterwards changed to *pressus*. It differs from the *pressus*, however, in being less oblong, in being rather more inflated and less lenticular. In the teeth, while there is a strong assimilation to that peculiar character of the *pressus*, there is a marked difference; the elevation of the posterior portion of the cardinal tooth being very much less, and the two bifid portions much closed. The umbonial slope is disposed to be angular. The transverse striæ are close. The marks of growth distant. This species, like *U. pressus*, has the symphynote character of the wing.

UNIO RUFUSCULUS. Pl. XIV. Fig. 7.

Testâ lævi, ellipticâ, subcompressâ, inæquilaterali, posticè biangulatâ; valvulis subcrassibus; natibus subprominentibus; epidermide tenebroso-fuscâ, striatâ; dentibus cardinalibus obliquis, parvis striatisque; lateralibus remotis, longis, lamellatis, rectis; margaritâ vel albâ vel salmonis colore tinctâ.

Shell smooth, elliptical, rather compressed, inequilateral, biangular behind; valves rather thick; beaks somewhat prominent; epidermis dark-brown, striate; cardinal teeth oblique, small and striate; lateral teeth remote, long, lamellar and straight; nacre white or salmon coloured.

Hab. Abbeville District, S. C. J. P. Barratt, M. D.
My cabinet.

Diam. .9, Length 1.4, Breadth 2.4 inches.

Shell smooth, elliptical, rather compressed, inequilateral, biangular behind, rounded before, substance of the shell rather thick, thicker before; beaks somewhat prominent and submedial; ligament rather long and thick; epidermis dark-brown, obscurely rayed on the posterior slope, striate towards the margin, with obscure, nearly equidistant marks of growth; umbonial slope subangular; cardinal teeth oblique, small, with regular striæ; single in the right and double in the left valve; lateral teeth separated from the cardinal tooth, long, lamellar, straight, and slightly thickened towards the posterior end; anterior cicatrices distinct; posterior cicatrices confluent; dorsal cicatrices placed rather above the centre of the cavity of the beaks; cavity of the shell rather shallow; cavity of the beaks very small; nacre white or salmon coloured.

Remarks.—This species belongs to the group of which the common *U. complanatus* is the type. It seems to stand between it and *U. Congaræus*, (Nobis.) It is more angular on the umbonial slope than *complanatus*, and less so than *Congaræus*. Of the three specimens received, two are salmon coloured. The oldest specimen is very thick and much eroded. The youngest is rather thin. The outline of this species is very much like the figure of *Unio planilateris*, Conrad, but it differs in the colour of the epidermis, in the thickness of the teeth, and the obliqueness of the umbonial slope. It is also very like *U. fulvus*, (Nobis,) which also came from South Carolina; and it is possible that when good suites are brought together, this species may prove to be only the adult of a flatter variety of *fulvus*.

UNIO WHITEIANUS. Pl. XIV. Fig. 8.

Testâ lævi, ellipticâ, inflatâ, valdè inæquilaterali, posticè subangulatâ; valvulis crassis; natibus subprominentibus; epidermide vel tenebroso-fuscâ vel nigrâ, striatâ, ad apices politâ; dentibus cardinalibus magnis, elevatis, crenulatis; lateralibus longis subcurvisque; margaritâ vel albâ vel salmonis colore tinctâ.

Shell smooth, elliptical, inflated, very inequilateral, subangular behind; valves thick; beaks somewhat prominent; epidermis dark-brown or black, striate, towards the beaks polished; cardinal teeth large, elevated, crenulated; lateral teeth long and somewhat curved; nacre white or salmon coloured.

Hab. near Savannah, Geo. Rev. G. White.
My cabinet and cabinet of Mr. White.

Diam. .1, Length 1.4, Breadth 2.5 inches.

Shell smooth, elliptical, inflated, very inequilateral, rounded before, subangular behind; substance of the shell thick; beaks somewhat prominent; placed towards the anterior margin; ligament short and thick; epidermis dark-brown or black, roughly striate on the margin, but smooth and highly polished on the sides and towards the beaks; marks of growth rather indistinct and distant; umbonial slope rounded; cardinal teeth large, elevated, crenulated, pointed, single in the right and double in the left valve; lateral teeth long, rather thick, somewhat curved and separated from the cardinal tooth; anterior cicatrices distinct; posterior cicatrices distinct; dorsal cicatrices placed nearly in the centre of the cavity of the beaks; cavity of the shell rather deep; cavity of the beaks shallow and rounded; nacre usually salmon coloured, sometimes white.

Remarks.— Many of this species were sent to me by Mr. White. None of the beaks are sufficiently perfect to detect the undulations of the tips. The form and size of this species approaches closely to *U. confertus* and *U. Geddingsianus*, (Nobis.) It may be distinguished from them, however, by the remarkable polish of the superior portion of the disk and the beaks, and by the rough striæ of the other portion of the epidermis. The adult specimens are all very dark-brown or black. The younger shells are yellowish, with numerous dark-green rays over nearly the whole disk. Some of the adult specimens are quite straight on the basal margin, and almost falcate.

Unio Lazarus. Pl. XIV. Fig. 9.

Testâ lævi, arcuatâ, valdè transversâ, compressâ, valdè inæquilaterali, posticè subbiangulatâ; valvulis pertenuibus; natibus undulatis, vix prominentibus; epidermide tenebroso-fuscâ, rugoso-striatâ; dentibus cardinalibus minimis; lateralibus longis, acicularis, remotis rectisque; margaritâ vel albâ vel purpureâ et valdè iridescente.

Shell smooth, arcuate, very wide, compressed, very inequilateral; subbiangular behind; valves very thin; beaks undulated, scarcely prominent; epidermis dark-brown, roughly striate; cardinal teeth very small; lateral teeth long, acicular, remote and straight; nacre white or purple and very iridescent.

Hab. Abbeville District, S. C. J. P. Barratt, M. D.
My cabinet and cabinet of Dr. Barratt.

Diam. .4, Length .9, Breadth 2 inches.

Shell smooth, emarginate at base, very wide, compressed, very inequilateral, behind subbiangular, before rounded; posterior slope wide and flattened; substance of the shell very thin, thicker before; beaks placed near to the anterior margin, furnished with very minute undulations at the tip, scarcely prominent and very small; ligament long and thin; epidermis dark-brown, roughly striate, with obscure marks of growth; umbonial slope biangular; cardinal teeth very small, crenulate, double in the left and single in the right valve; lateral teeth long, separated from the cardinal tooth, acicular, straight and slightly turned up at the extreme posterior point; anterior cicatrices distinct; posterior cicatrices confluent; dorsal cicatrices small and placed under the plate posterior to the cardinal tooth; cavity of the shell very shallow; cavity of the beaks very shallow and rounded; nacre white or purple.

Remarks.—This is a small, very thin and fragile species. The young have very much the appearance of the young of the elongate variety of *U. complanatus*, but the adult and middle aged are arcuate, and cannot be mistaken for that species. The young are greenish, with obscure rays, and the undulations of the beaks are less pronounced than those of the *complanatus*. It is somewhat like *U. folliculatus*, (Nobis,) but is a thinner and less transverse species. The older specimens are very much compressed in the middle, near to the basal margin.

UNIO MERUS. Pl. XV. Fig. 10.

Testâ lævi, ellipticâ, subinflatâ; valvulis crassis; natibus subprominentibus, ad apices undulatis; epidermide luteâ, radiatâ, nitidâ; dentibus cardinalibus magnis, crenulatis; lateralibus longis, rectis, à cardinalibus separatis; margaritâ albâ et iridescente.

Shell smooth, elliptical, somewhat inflated; valves thick; beaks somewhat prominent, undulated at the beaks; epidermis yellow, radiated, shining; cardinal teeth large, crenulate; lateral teeth long, straight and separated from the cardinal tooth; nacre white and iridescent.

Hab. Abbeville District, S. C. J. P. Barratt, M. D.
My cabinet and cabinet of Dr. Barratt.

Diam. .6, Length 1, Breadth 1.5 inches.

Shell smooth, elliptical, rather inflated, somewhat striate, rounded before and angular behind; substance of the shell thick, thinner behind; beaks somewhat prominent, rather coarsely undulated at the tip; ligament short and rather thick; epidermis yellow, obscurely radiated, shining; umbonial slope subangular; marks of growth distant and distinct; cardinal teeth large, compressed, crenulate, pointed, single in the right and double in the left valve; lateral teeth long, straight, lamellar, separated from the cardinal tooth; anterior cicatrices approximate; posterior cicatrices confluent; dorsal cicatrices situated on the under side of the cardinal tooth; cavity of the shell shallow; cavity of the beaks small and angular; nacre white and iridescent.

Remarks.—In its general character, this species resembles *U. Congaræus*, (Nobis.) It is not, however, so much compressed, and the angle of the umbonial slope is much less expressed. Of the six specimens before me, five have white nacre. The sixth and largest is slightly tinted with salmon colour.

UNIO CONCAVUS. Pl. XV. Fig. 11.

Testâ lævi, ellipticâ, inflatâ; valvulis subtenuibus; natibus prominulis; epidermide pallido-luteolâ, viridostriatâ; dentibus cardinalibus parvis, compressis; lateralibus longis rectisque; margaritâ albâ et iridescente.

Shell smooth, elliptical, inflated; valves rather thin; beaks slightly prominent; epidermis pale-yellow, with green rays; cardinal teeth small and compressed; lateral teeth long and straight; nacre white and iridescent.

Hab. Abbeville District, S. C. J. P. Barratt, M. D.
My cabinet.

Diam. .8, Length 1.2, Breadth 2.2 inches.

Shell smooth, elliptical, inflated, rounded before and subangular behind; substance of the shell rather thin, slightly thickened before; beaks slightly prominent, nearly medial; ligament rather long and thin; epidermis pale-yellow, with numerous green rays reaching to the margin, smooth and polished, scarcely showing the lines of growth; cardinal teeth compressed, single in both valves, and abruptly terminated; lateral teeth long, straight, and slightly elevated; anterior cicatrices distinct; posterior cicatrices confluent; dorsal cicatrices within the cavity of the beaks; cavity of the shell deep and rounded; cavity of the beaks shallow and subangular; nacre white and iridescent.

Remarks.—A single adult specimen only has been received from Dr. Barratt, with two quite young ones. The beaks of one of these are sufficiently perfect to show that the undulations extend some distance from the point, and that they are rather complex. The young are rayed over the whole disk. The adult specimen has many dark-green rays over the posterior portion, but none on the anterior portion. This species is somewhat like *Unio cariosus*, Say, but is more regularly elliptical and more transverse. The young specimens very much resemble the young of *U. radiatus*.

UNIO INEPTUS. Pl. XV. Fig. 12.

Testâ lævi, ellipticâ, subcompressâ; valvulis tenuibus; natibus vix prominentibus, ad apices undulatis; epidermide valdè tenebrosâ, striatâ; dentibus cardinalibus parvis, compressis; lateralibus longis, subrectis, à cardinalibus separatis; margaritâ cæruleâ.

Shell smooth, elliptical, somewhat compressed; valves thin; beaks scarcely prominent, undulated at the beaks; epidermis very dark and striated; cardinal teeth small, compressed; lateral teeth long, nearly straight and separated from the cardinal tooth; nacre bluish.

Hab. Abbeville District, S. C. J. P. Barratt, M. D.
My cabinet.

Diam. .4, Length .7, Breadth 1.3 inches.

Shell smooth, elliptical, somewhat compressed, rounded before and subangular behind; substance of the shell thin; beaks small, scarcely prominent; undulated rather coarsely at the tip; ligament short and thin; epidermis much striated, very dark-brown, nearly black; umbonial slope rounded; marks of growth indistinct; cardinal teeth small, compressed, crenulate, double in the left and single in the right valve; lateral teeth long, nearly straight, thickened at the posterior end; anterior cicatrices distinct; posterior cicatrices confluent; dorsal cicatrices placed nearly in the centre of the cavity of the beaks; cavity of the shell very shallow; cavity of the beaks very shallow and angular; nacre bluish.

Remarks.—A single specimen only of this species is before me, and may not be adult. It is quite small, and somewhat like *U. fabalis*, (Nobis,) of our western rivers, but is still more closely allied, in general form and colour, to *U. faba*, D'Orb. It differs from the former in being a thin shell, and having a more elevated posterior slope, and from the latter in having the sides more compressed, and in the beaks having irregular undulations, while the *faba* has the radiated folds so peculiar to most of the South American species. The specimen of *ineptus* before me has two obscure rays on the posterior slope, none being apparent over the disk. More perfect specimens may present rays.

UNIO BUXEUS. Pl. XV. Fig. 13.

Testâ lævi, ellipticâ, subinflatâ; valvulis subcrassis; natibus subprominentibus; epidermide tenebroso-fuscâ; dentibus cardinalibus subparvis erectisque; lateralibus longis subrectisque; margaritâ albâ et iridescente.

Shell smooth, elliptical, rather inflated; valves somewhat thick; beaks somewhat prominent; epidermis dark-brown; cardinal teeth rather small and erect; lateral teeth long and nearly straight; nacre white and iridescent.

Hab. Abbeville District, S. C. J. P. Barratt, M. D.
My cabinet and cabinet of Dr. Barratt.

Diam. .7, Length 1, Breadth 1.7 inches.

Shell smooth, elliptical, rather inflated, rounded before and angular behind; substance of the shell rather thick, thinner behind; beaks somewhat prominent, submedial; ligament rather short and thin; epidermis dark-brown, with obscure rays, very smooth and polished; marks of growth distant, regular and well marked; cardinal teeth rather small, compressed, double in the left and single in the right valve; lateral teeth long, nearly straight and enlarged at the posterior end; anterior cicatrices distinct; posterior cicatrices confluent; dorsal cicatrices placed on the under side of the cardinal tooth; cavity of the shell rather shallow; cavity of the beaks shallow and angular; nacre white and iridescent.

Remarks.—Dr. Barratt sent me three specimens of this species, one only being adult. Neither of them have the beaks sufficiently perfect to show any undulations. In outline it resembles *U. concavus*, (Nobis,) but it is more compressed, and differs much in the colour of the epidermis and the rays. The adult specimen is slightly salmon coloured in the cavity of the beaks. One of the younger specimens is distinctly salmon coloured.

UNIO PYGMÆUS. Pl. XV. Fig. 14.

Testâ lævi, ellipticâ, subcompressâ, striatâ; valvulis subtenuibus; natibus subprominentibus; epidermide tenebroso-fuscâ; dentibus cardinalibus parvis; lateralibus linearis subcurvisque; margaritâ cæruleâ et iridescente.

Shell smooth, elliptical, rather compressed, striate; valves rather thin; beaks somewhat prominent; epidermis dark-brown; cardinal teeth small; lateral teeth linear and slightly curved; nacre bluish and iridescent.

Hab. Abbeville District, S. C. J. P. Barratt, M. D.
My cabinet.

Diam. .4, Length .7, Breadth 1.2 inches.

Shell smooth, elliptical, rather compressed, striate, rounded before and angular behind; substance of the shell rather thin, thicker before; beaks somewhat prominent; ligament short and thin; epidermis dark-brown, striate, with obscure rays, and slightly polished; umbonial slope angular; marks of growth indistinct; cardinal teeth small, compressed; lateral teeth rather long, linear, slightly curved, and thickened at the posterior end; anterior cicatrices distinct; posterior cicatrices confluent; dorsal cicatrices in the centre of the cavity of the beaks; cavity of the shell shallow; cavity of the beaks small and angular; nacre blue and very iridescent behind.

Remarks.—This is a very small species, and a single valve only, (the right) has been received by me. I do not think this is quite adult. The beak is not sufficiently perfect to observe any undulations. This shell is about the size of *U. fabalis*, (Nobis,) and *parvus*, Barnes, but cannot be confounded with either of them. It is a thinner shell than the former and less inflated than the latter.

UNIO FRATERNUS. Pl. XVI. Fig. 15.

Testâ lævi, ellipticâ, compressâ, striatâ, valdè inequilaterali, posticè subbiangulari; valvulis subcrassis; natibus prominulis; epidermide tenebroso-fuscâ; dentibus cardinalibus parvis, tuberculatis, striatis; lateralibus prælongis subcurvisque; margaritâ vel albâ vel purpureâ et iridescente.

Shell smooth, elliptical, compressed, striate, very inequilateral, subbiangular behind; valves rather thick; beaks somewhat prominent; epidermis dark-brown; cardinal teeth small, tuberculate, striate; lateral teeth very long and somewhat curved; nacre white or purple and iridescent.

Hab. Columbus, Georgia, Dr. Boykin; Abbeville District, S. C., J. P. Barratt, M. D.
My cabinet and cabinet of Dr. Barratt.

Diam. .6, Length 1.3, Breadth 1.4 inches.

Shell smooth, elliptical, compressed, striate, very inequilateral, subbiangular behind, obtusely rounded before, flattened on the sides; substance of the shell somewhat thick, thinner behind; beaks somewhat prominent and placed near to the anterior margin; ligament long and rather thick; epidermis very dark-brown, darker on the posterior slope, with distant marks of growth; posterior slope compressed, with fold-like wrinkles, and raised into a carina; umbonial slope obtusely angular; cardinal teeth small, tuberculate and striate; lateral teeth very long, somewhat curved, thicker at the posterior end and separated from the cardinal tooth; anterior cicatrices distinct; posterior cicatrices confluent; dorsal cicatrices placed in a row on the interior of the plate; palleal cicatrix impressed; cavity of the shell very shallow; cavity of the beaks very shallow and rounded; nacre white or purple and iridescent.

Remarks.—This species belongs to the group of which *U. complanatus* is the type. It is closely allied to *U. Hopetonensis*, (Nobis,) but differs in being more elliptical in the outline, and having a less elevated carina, and in the cardinal teeth, which are not compressed. The outline is more that of *Unio Hembeli*, Con., but it is not so thick a shell, and does not possess the coarse folds on the posterior slope, which in that species distinguish it so well. The *Hembeli* is also darker, the striæ coarser, and the umbonial slope more rounded. Of the six specimens before me, two are white, three purple, and one slightly salmon coloured. The margin is broad and dark coloured.

UNIO CUVIERIANUS. Pl. XVI. Fig. 16.

Testâ lævi, ellipticâ, convexâ, inequilaterali, posticè obtusè angulatâ; valvulis crassis; natibus prominulis; epidermide nitidâ, castaneo-fuscâ; dentibus cardinalibus magnis crenulatisque; lateralibus prælongis subcurvisque; margaritâ argenteâ.

Shell smooth, elliptical, convex, inequilateral, obtusely angular behind; valves thick; beaks a little prominent; epidermis shining, chestnut-brown; cardinal teeth large, crenulate; lateral teeth very long and somewhat curved; nacre silvery white.

Hab. Washington county, Georgia, Rev. G. White.
Cabinet of Major Le Conte.

Diam. 1.5, Length 2.2, Breadth 3.9 inches.

Shell smooth, elliptical, convex, inequilateral, obtusely angular behind, inflated over the umbones; substance of the shell very thick; beaks but slightly prominent and submedial;

ligament not very long and moderately thick; epidermis chestnut-brown, with very distant marks of growth; posterior slope wide, rather flattened, with two raised lines passing from the beaks to the posterior margin; umbonial slope large and rounded; cardinal teeth large, crenulate, double in the left and single in the right valve; lateral teeth very long, somewhat curved and thickened towards the posterior end, separated from the cardinal tooth; anterior cicatrices large and distinct; posterior cicatrices large and distinct; dorsal cicatrices small, and placed nearly in the centre of the beaks; palleal cicatrix deeply impressed; cavity of the shell wide, not very deep; cavity of the beaks exceedingly small and rounded; nacre silvery white.

Remarks.—A single specimen only of this fine shell has come under my notice, and it belongs to the cabinet of my friend Major Le Conte. It is a member of that great group of which *U. complanatus* is the type, but it differs from that species somewhat in outline, in being inflated over the umbonial slope, and in having a smoother epidermis.

I dedicate this fine species to the memory of the great zoologist, Baron Cuvier.

UNIO FORBESIANUS. Pl. XVI. Fig. 17.

Testâ lævi, triangulari, subcompressâ, inequilaterali, posticè angulatâ; valvulis subcrassis; natibus subprominentibus, ad apices undulatâ; epidermide castaneo-fuscâ; dentibus cardinalibus acuminatis, subgrandibus; lateralibus longis subrectisque; margaritâ vel albâ vel purpureâ et iridescente.

Shell smooth, triangular, rather compressed, inequilateral, angular behind, valves rather thick; beaks rather prominent, undulated at the tip; epidermis chestnut-brown; cardinal teeth rather large and pointed; lateral teeth large and nearly straight; nacre white or purple and iridescent.

Hab. Savannah River. Major Le Conte.
My cabinet and cabinet of Major Le Conte.

Diam. .8, Length 1.2, Breadth 1.8 inches.

Shell smooth, triangular, rather compressed, inequilateral, acutely angular behind, slightly flattened before the umbonial slope; substance of the shell rather thick, thinner behind; beaks rather prominent and rather coarsely undulated at the tip; ligament rather short and moderately thick; epidermis chestnut-brown, lines of growth distant and distinct, sometimes rayed; umbonial slope raised into rather an acute angle; posterior slope flattened and furnished with numerous angular crumpled folds; cardinal teeth rather large, pointed and crenulate; lateral teeth long and nearly straight; anterior cicatrices distinct; posterior cicatrices distinct; dorsal cicatrices placed on the under side of the cardinal teeth; cavity of the shell rather small and rounded; cavity of the beaks shallow and angular; nacre white or purple and iridescent.

Remarks.—Several of these of different ages, were given to me by my friend Major Le Conte, to whom I owe the possession of so many new species. It is allied to *U. incrassatus*, (Nobis,) but is not so transverse. In the young, the epidermis is rather polished, and some of them have greenish rays over the middle of the disk. The smallest of them all is purple in the nacre and beautifully iridescent. Some of the specimens seem to be devoid of rays altogether.

Named in honour of Professor E. Forbes, of King's College, London.

UNIO KLEINIANUS. Pl. XVII. Fig. 18.

Testâ plicatâ, triangulari, compressâ, ad latere planulatâ, inæquilaterali, posticè obtusè angulatâ; valvulis subcrassis; natibus subprominentibus; epidermide tenebroso-fuscâ; dentibus cardinalibus crassis crenulatisque; lateralibus brevis rectisque; margaritâ albâ et iridescente.

Shell plicate, triangular, compressed, flattened on the side, inequilateral, obtusely angular behind; valves rather thick; beaks somewhat prominent; epidermis dark-brown; cardinal teeth thick and crenulate; lateral teeth short and straight; nacre white and iridescent.

Hab. Suwanee river, Florida. Major Le Conte.

My cabinet and cabinet of Major Le Conte.

Diam. .8, Length 1.2, Breadth 1.6 inches.

Shell plicate, triangular, compressed, flattened at the side, inequilateral, obtusely angular behind, enlarged over the umbonial slope; substance of the shell rather thick, thinner behind; beaks somewhat prominent; epidermis dark-brown, with marks of growth rather distant; ligament short and thick; folds irregular, small and extending nearly over the whole disk, on the posterior slope more regular and nearly parallel; posterior slope large, and raised into a carina, umbonial slope obtusely angular; cardinal teeth thick, large, crenulate and double in both valves; lateral teeth short and straight, separated from the cardinal tooth by a rather large plate; anterior cicatrices distinct; posterior cicatrices distinct; palleal cicatrix well impressed; cavity of the shell rather deep and rounded; cavity of the beak deep and acutely angular; nacre white and iridescent.

Remarks.—A new plicate species is rather a rare acquisition, and I believe this is the first from Florida. Major Le Conte, I believe, procured but two specimens, both of which are before me. In outline and size it is allied to *U. infucatus*, Con., which, however, is not figured as a folded shell by him. It differs, however, in having larger folds, which are more interrupted, and in the colour of the epidermis, which, in *infucatus*, when old, is almost, if not quite, black. The folds in *Kleinianus* are very irregular, and so much broken up as to have the appearance, on part of the disk, of being nodules. The beaks, unfortunately, of the two specimens are much eroded, and their characters, therefore, not known. I should suppose that, in perfect or young specimens, the folds would extend to the apex, and present a fine appearance.

This interesting species I dedicate to Klein, the author of *Testamen Methodi*, 1773, who was in advance of most of the conchologists of his day.

UNIO SATUR. Pl. XVII. Fig. 19.

Testâ lævi, triangulari, valdè inflatâ, inæquilaterali, posticè truncatâ; valvulis crassis; natibus maximis, inflatis, rotundatis; epidermide tenebroso-fuscâ, politâ; dentibus cardinalibus magnis, compressis, obliquis, acuminatis; crenulatis; lateralibus longis, lamellatis subcurvisque; margaritâ albâ et iridescente.

Shell smooth, triangular, very much inflated, inequilateral, truncate behind; valves thick; beaks large, inflated and rounded; epidermis dark-brown, polished; cardinal teeth large, compressed, oblique, acuminate, crenulate; lateral teeth long, lamellar and curved; nacre white and iridescent.

Hab. Alexandria, Louisiana, J. Hale, M. D. Lake Calcashue, near New Orleans, Mr. Anthony.

My cabinet and cabinets of Dr. Hale and Mr. Anthony.

Diam. 2.1, Length 2.5, Breadth 3 inches.

Shell smooth, triangular, very much inflated, inequilateral, truncate behind; substance of the shell thick, beaks large, inflated, rounded and placed towards the anterior margin; ligament short and very thick; epidermis dark-brown, polished, striate, in the young nearly olive; lines of growth very distant; posterior slope flattened, with an obscure, impressed, rather wide groove from the beaks to the margin; umbonial slope angular towards the beaks and inflated; cardinal teeth large, compressed, oblique, acuminate and crenulate; lateral teeth long, lamellar, curved, enlarged at the posterior end and separated from the cardinal tooth; anterior cicatrices distinct; posterior cicatrices confluent, dorsal cicatrices placed on the under side and near the edge of the plate; palleal cicatrices not deeply impressed; cavity of the shell very deep and rounded; cavity of the beaks very deep and rounded; nacre white and iridescent.

Remarks.—Several specimens of this species have been in my possession for some years. It belongs to the group of which *U. ovatus*, Say, may be considered the type. It is more like *U. occidens*, (Nobis,) than *ovatus*, having the umbonial slope rounded. It differs, however, from the latter species in having a more inflated disk, and in being darker and rounder. It is not so inflated as *capax*, Green, but much like it. All the five individuals before me are females, unless the youngest one. The truncation of the posterior margin is very remarkable. In the oldest specimen, that portion of the disk is so turned in, as to present nearly a flat surface. The beaks are very much inflated and drawn back.

UNIO LAMARCKIANUS. Pl. XVII. Fig. 20.

Testâ nodulosâ, subrotundâ, compressâ, in medio planulatâ, subequilaterali, posticè subangulatâ, puncti-unculus passim radiatâ; valvulis crassis; natibus prominentibus, compressis, ad apices undulatis; epidermide luteâ, virido-radiatâ; radiis numerosis interruptis; dentibus cardinalibus magnis, compressis; lateralibus brevibus crassisque; margaritâ argenteâ.

Shell nodulose, subrotund, compressed, flattened in the middle, nearly equilateral, obtusely angular behind, with dotted rays over the whole disk; valves thick; beaks prominent, compressed, and angular at the point; epidermis yellow, with green rays; rays numerous and interrupted; cardinal teeth large, compressed; lateral teeth short and thick; nacre silvery white.

Hab. Caddo river, Arkansas, Professor Powell. Washitta river, near the Hot Springs, Arkansas, Dr. Hale.

My cabinet and cabinets of Prof. Powell and Mr. Shaeffer.

Diam. .5, Length 1.1, Breadth 1.4 inches.

Shell nodulous, subrotund, compressed, flattened from the beak to the basal margin, nearly equilateral, obtusely angular behind, with dotted rays over the whole disk; substance of the shell thinner behind; beaks prominent, compressed and angular at the point; ligament very short and thick; epidermis yellow, with green rays over the whole disk, on the anterior part furnished with a few larger rays; lines of growth distant; rays numerous, interrupted, dotted and chain-like; umbonial slope raised into an obtusely angular ridge from the beaks to the posterior basal margin; cardinal teeth large, compressed, crenulate; lateral teeth short, thick and enlarged at the posterior end; anterior cicatrices distinct; posterior cicatrices distinct, dorsal cicatrices small and placed on the under side of the cardinal tooth; palleal cicatrices impressed; cavity of the shell very shallow; cavity of the beaks rather deep and angular; nacre silvery white.

Remarks.—The curious and beautiful interrupted rays which cover the whole disk of this species, bring it into the group of which the *U. irroratus*, (Nobis,) was the first described, and may be considered the type. There are now four known, all of which, while easily distinguished, have very much the same general characteristics,—*irroratus*, *dromas*, *caperatus* and *Lamarckianus*. The five specimens before me are of different sizes. The largest is the most perfect one, and is that which is figured. It is about the size of a young *dromas*, when about to finish its two humps. It differs from all the other three species, in having an angular ridge from the beaks to the posterior basal margin. The beaks are remarkably compressed and pointed, like *securis*, (Nobis.) The nodules are little more than rugosities, disposed to run into small folds. Both this and *caperatus* might be said scarcely to belong to the nodulous division of the genus, but they are certainly not devoid of nodules, though they are small and irregular. The lines of growth are very different from *caperatus*. In the latter they are very close. In outline, the *Lamarckianus* is nearly the same with *intermedius*, Con., from Tennessee. It cannot, however, be confounded with that species, as it has not the furrow which that shell has on the posterior slope; nor has it the well expressed verrucose character of it. It differs also in the rays, which in *intermedius* are arrow-head shaped. Indeed the *intermedius* belongs to another group, of which *metanever*, Raf., may be considered the type.

I dedicate this beautiful species to the memory of the great naturalist Lamarck.

UNIO HEBES. Pl. XVIII. Fig. 21.

Testâ lævi, oblongâ, subcompressâ, ad laterè planulatâ, inæquilaterali, posticè truncatâ; valvulis subcrassis; natibus subprominentibus, ad apices undulatis; epidermide striatâ tenebroso-fuscâ, eradiatâ; dentibus cardinalibus subcrassis, compressis, obliquis, acuminatis; lateralibus longis curvisque; margaritâ albâ.

Shell smooth, oblong, rather compressed, flattened on the side, inequilateral, truncate behind; valves rather thick; beaks somewhat prominent, undulate at the tip; epidermis striate, dark-brown, rayless; cardinal teeth rather thick, compressed, oblique, acuminate; lateral teeth long and curved; nacre white.

Hab. Oconee river, near Athens, Georgia. Major Le Conte.
My cabinet and cabinet of Major Le Conte.

Diam. .8, Length 1.3, Breadth 2.2 inches.

Shell smooth, oblong, rather compressed, flattened on the side, inequilateral, truncate behind, rounded before; substance of the shell rather thick, beaks somewhat prominent, undulated at the tip and submedial; ligament rather long, thin and nearly covered; epidermis dark brown, without rays, thickly striate over the lower half of the shell, thick and smooth above; lines of growth not well defined; posterior slope compressed into an elevated carina, with a slightly impressed furrow, which has two very obscure raised lines; umbonial slope rounded; cardinal teeth rather thick, compressed, oblique, acuminate, crenulate and double in both valves; lateral teeth long, curved and thickened at the posterior end; anterior cicatrices distinct; posterior cicatrices confluent; dorsal cicatrices placed nearly in the centre of the cavity of the beaks; cavity of the shell shallow and wide; cavity of the beaks shallow and obtusely angular; nacre white.

Remarks.—Among the many shells from Georgia which I owe to the kindness of Major Le Conte, was a single specimen of this species. It is allied to *U. Lecontianus*, (Nobis,) and is like it in outline; but it is more compressed, higher in the carina, and much more striate and rough on the exterior; it is also a thinner shell. The posterior margin of this specimen is also slightly emarginate. The tips of the beaks are not perfect, but they are enough so in this specimen, to show that the undulations are more numerous than usual and very beautiful. The upper portion of the double lateral tooth is very small in this specimen.

Unio Moussonianus. Pl. XVIII. Fig. 22.

Testâ lævi, ellipticâ, subconvexâ, subinequilaterali, posticè angulatâ; valvulis percrassis; natibus prominentibus, crassis; epidermide castaneo-fuscâ; dentibus cardinalibus magnis, subcompressis; lateralibus longis, crassis subcurvatus; margaritâ argenteâ et iridescente.

Shell smooth, elliptical, subconvex, subinequilateral, angular before; valves very thick; beaks prominent and thick; epidermis chestnut-brown; cardinal teeth large, rather compressed; lateral teeth long, thick, somewhat curved; nacre silvery white and iridescent.

Hab. Georgia, J. P. Barratt, M. D.
My cabinet and cabinet of Dr. Barratt.

Diam. 1.1, Length 1.8, Breadth 2.8 inches.

Shell smooth, elliptical, subconvex, somewhat inequilateral, angular behind and rounded before; substance of the shell very thick, rather thinner behind; beaks prominent and thick; ligament rather long and thick; epidermis chestnut-brown, marks of growth distant and rather distinct; umbonial slope obtusely angular; cardinal teeth large, rather compressed, double in the left and single in the right valve; lateral teeth long, thick, laminate, thickened towards the posterior end and slightly arched; anterior cicatrices distinct; posterior cicatrices distinct; dorsal cicatrices placed on the under side of the plate, near to the edge; palleal cicatrix impressed; cavity of the shell not very deep; cavity of the beaks rather shallow and angular; nacre silvery white and iridescent.

Remarks.—The outline and general appearance of this species reminds one of *U. delodontus*, Lam. It is, however, a thicker shell and has thicker teeth. But three specimens were received by me. One of them is slightly tinged with salmon colour in the cavity of the beaks, and others may be found very likely more deeply coloured.

I dedicate this species to Prof. A. Mousson, of Zurich, the author of "The Land and Fresh Water Shells of Java."

Unio nigerrimus. Pl. XVIII. Fig. 23.

Testâ lævi, ellipticâ, subconvexâ, inæquilaterali, posticè subrotundatâ; valvulis subtenuibus; natibus parvis, prominulis, ad apices undulatis; epidermide nigrâ, nitidâ, striatâ; dentibus cardinalibus subcompressis, obliquis, acuminatis, crenulatis; lateralibus longis, lamellatis subcurvisque; margaritâ albâ et valdè iridescente.

Shell smooth, elliptical, rather convex, inequilateral, rounded behind; valves rather thin; beaks small, slightly prominent, undulated at the tip; epidermis black, shining, striate; cardinal teeth rather compressed, oblique, acuminate, crenulate; lateral teeth long, lamellar and somewhat curved; nacre white and very iridescent.

Hab. Alexandria, Louisiana, J. Hale, M. D.

My cabinet and cabinets of Dr. Hale, and Acad. of Nat. Science.

Diam. .7, Length 1.3, Breadth 2.2 inches.

Shell smooth, elliptical, rather convex, inequilateral, rounded behind; substance of the shell rather thin; beaks small, slightly prominent, undulated at the tip; ligament rather long and thin; epidermis shining, black, striate, in the young radiate all over the disk; marks of growth rather distant; posterior slope compressed into a small carina; umbonial slope slightly raised and rounded; cardinal teeth rather large, somewhat compressed, oblique, acuminate, crenulate and double in both valves; lateral teeth long, lamellar, somewhat curved and separated from the cardinal tooth; anterior cicatrices distinct; posterior cicatrices confluent; dorsal cicatrices placed near the edge of the plate and on the cardinal tooth; cavity of the shell rather shallow; cavity of the beaks shallow and subrotund; nacre white and very iridescent.

Remarks.—This species is nearly allied to *U. Haleianus*, (Nobis,) but differs in the outline, and is not so wide; in the epidermis, which is blacker and more shining, and in the beaks, the undulations of which are more numerous and less regular. It belongs to that group of which *U. Nashvillianus*, (Nobis,) may be considered the type, the beaks being very much, in their undulations, of the character of that species. All the adults, male and female, of which I have many specimens, are very black and apparently without rays, but when held up to a strong light, delicate obscure rays may be observed, particularly about the umbonial slope. In the individuals of one-third growth and less, the epidermis is dark-green and covered with rays. The female differs very much in outline from the male, and is much inflated on that portion of the disk which tends to the posterior basal margin. In this very much enlarged female characteristic, this species resembles *Nashvillianus*, *Haleianus* and *parvus*. This enlargement makes that margin obliquely truncate.

Unio Prevostianus. Pl. XIX. Fig. 24.

Testâ lævi, ellipticâ, subcompressâ, valdè inequilaterali, posticè rotundatâ; valvulis pertenuibus; natibus parvis, prominulis, ad apices undulatis; epidermide luteâ, tenebroso-radiatâ, politâ; dentibus cardinalibus parvissimus, compressis, perobliquis; lateralibus longis, lamellatis subcurvisque; margaritâ cæruleâ et iridescente.

Shell smooth, elliptical, rather compressed, very inequilateral, rounded behind; valves very thin; beaks small, slightly prominent, undulated at the tip; epidermis yellow, very much and darkly radiated, polished; cardinal teeth very small, compressed, very oblique; lateral teeth long, lamellar and somewhat curved; nacre bluish and iridescent.

Hab. Eutowah River, Georgia, Mr. C. M. Wheatley.

Cabinet of Mr. Wheatley.

Diam. .7, Length 1.2, Breadth 2.3 inches.

Shell smooth, elliptical, rather compressed, very inequilateral, rounded behind; substance of the shell very thin; beaks small, slightly prominent, undulated at the tip; ligament long and thin; epidermis polished, yellow, with numerous broad dark-green rays covering nearly the whole disk, lighter before and very dark behind, with very distant marks of growth; posterior slope compressed and raised into a carina and very dark-green; umbonial slope but slightly raised and rounded; cardinal teeth very small, compressed, very oblique, double in both valves; lateral teeth long, lamellar, somewhat curved and abrupt at the posterior end, separated from the cardinal tooth; anterior cicatrices distinct; posterior cicatrices confluent; dorsal cicatrices placed in the cavity of the beaks and on the under side of the plate; palleal cicatrices very indistinct; cavity of the shell rather shallow and rounded; cavity of the beaks shallow and subangular; nacre bluish and beautifully iridescent.

Remarks.—A single specimen only was received by Mr. Wheatley from Georgia. In outline it is very much the same as *U. radiatus*, but it is a much thinner shell, and in its polish, rays, and thinness allied to *U. Modioliformis*, (Nobis.) The rays in this specimen are so numerous, broad and dark, as to give the shell quite a tenebrose appearance, almost obliterating the yellowishness of the epidermis.

I name this species after Professor Prevost of Geneva, who, in his able memoir, "De la generation chez les moules des peintres" (*Unio pictorum*) was the first by anatomical demonstration to prove the *Naïades* to be diœcious; it having been previously supposed the male and female organization existed in the same individual. (See Mem. de la Soc. de l'Hist. Nat. de Geneve, March 17, 1825.)

UNIO POWELLII. Pl. XIX. Fig. 25.

Testâ lævi, ellipticâ, subinflatâ, inæquilaterali, posticè angulatâ; valvulis subtenuibus; natibus subprominentibus; epidermide olivaceâ, nitidâ, eradiatâ; dentibus cardinalibus parvis, subcompressis, obliquis, acuminatis; lateralibus prælongis subcurvisque; margaritâ albâ et iridescente.

Shell smooth, elliptical, somewhat inflated, inequilateral, angular behind; valves rather thin; beaks rather prominent; epidermis olivaceous, shining, without rays; cardinal teeth small, rather compressed, oblique, acuminate; lateral teeth very long and somewhat curved; nacre white and iridescent.

Hab. Saline river, Arkansas, J. Hale, M. D., and Professor Powell.
My cabinet and cabinets of Dr. Hale and Prof. Powell.

Diam. 1.1, Length 1.8, Breadth 3.1 inches.

Shell smooth, elliptical, somewhat inflated, inequilateral, angular behind; substance of the shell rather thin, thicker before; beaks rather prominent and placed towards the anterior margin; ligament long and rather thick; epidermis olivaceous, shining, without rays, with distant; indistinct marks of growth; posterior slope rather depressed, with two slightly impressed lines from the beaks to the posterior margin; umbonial slope subangular; cardinal teeth small, rather compressed, oblique, pointed, crenulate, single in the right and double in the left valve; lateral teeth very long, somewhat lamellar, curved, separated from the cardinal tooth; anterior cicatrices distinct; posterior cicatrices confluent; dorsal cicatrices placed on the under side of the plate between the teeth; palleal cicatrices impressed; cavity of the shell rather deep; cavity of beaks deep and obtusely angular; nacre white and iridescent.

Remarks.—I owe to the kindness of Dr. Hale and Prof. Powell several specimens of this species of both sexes. It belongs to that group of which *cariosus*, Say, may be considered the type. In its outline it approaches the *luteolus*, Lam., but is not quite so transverse, while it is more so than *cariosus*. Two of the specimens are richly salmon-coloured in the cavity of the shell—the others are all white. The females are very much enlarged over the umbonial slope, and expanded at the posterior basal margin. None of the specimens which I received have any rays.

I have named this species in honour of Prof. W. Byrd Powell, of Memphis, Tenn.

UNIO AFFINIS. Pl. XIX. Fig. 26.

Testâ lævi, ellipticâ, convexâ, inequilaterali, posticè rotundatâ; valvulis subtenuibus; natibus subprominentibus; epidermide radiatâ, luteolâ, nitidâ; dentibus cardinalibus parvis, compressis, obliquis, acuminatis, crenulatis; lateralibus sublongis, lamellatis subcurvisque; margaritâ albâ et iridescente.

Shell smooth, elliptical, convex, inequilateral, rounded behind; valves rather thin; beaks rather prominent, epidermis rayed, yellowish, shining; cardinal teeth small, compressed, oblique, acuminate, crenulate; lateral teeth rather long, lamellar and rather curved; nacre white and iridescent.

Hab. Alexandria, Louisiana, J. Hale, M. D.
My cabinet.

Diam. .9, Length 1.4, Breadth 2.1 inches.

Shell smooth, elliptical, convex, inequilateral, rounded behind and inflated over the umbones; substance of the shell rather thin; beaks rather prominent, placed towards the anterior margin; ligament rather short and somewhat thick; epidermis shining, yellowish, with numerous rays and rather distant marks of growth; posterior slope rather elevated; umbonial slope rounded and inflated; cardinal teeth small, compressed, oblique, acuminate, crenulate, double in both valves; lateral teeth rather long, lamellar, slightly curved, separated from the cardinal tooth; anterior cicatrices distinct; posterior cicatrices confluent; dorsal cicatrices placed across the cavity of the beak under the cardinal tooth; cavity of the shell rather deep and rounded; cavity of the beaks rather shallow and subangular; nacre white and iridescent.

Remarks.—The outline of the specimen before me is of a remarkably regular oval. It belongs to the group of which *cariosus*, Say, may be considered the type. It is nearest in general character to *U. crocatus*, (Nobis,) but it is a larger species, not angular behind, and the rays are broader.

UNIO PROXIMUS. Pl. XX. Fig. 27.

Testâ lævi, ellipticâ, subinflatâ, subinæquilaterali, posticè rotundatâ; valvulis tenuibus; natibus parvis, subprominentibus; epidermide luteâ, radiatâ; dentibus cardinalibus valdè compressis, obliquis, acuminatis; lateralibus longis, lamellatis subrectisque; margaritâ albâ et iridescente.

Shell smooth, elliptical, somewhat inflated, subinequilateral, rounded behind; valves thin; beaks small, somewhat prominent; epidermis yellowish, radiated; cardinal teeth much compressed, oblique, acuminate; lateral teeth long, lamellar and nearly straight; nacre white and iridescent.

Hab. Georgia. J. P. Barratt, M. D.
My cabinet and cabinet of Dr. Barratt.

Diam. .7, Length 1.2, Breadth 2.1 inches.

Shell smooth, elliptical, somewhat inflated, rather inequilateral, rounded behind; substance of the shell thin; beaks small, slightly prominent; ligament rather short and thin; epidermis yellowish, with rather small, somewhat distant rays on the posterior portion of the disk, and with strong distant marks of growth; posterior slope rather depressed; umbonial slope gradually rounded; cardinal teeth much compressed, oblique, acuminate, double in both valves; lateral teeth thin, rather long, lamellar, nearly straight and separated from the cardinal teeth; anterior cicatrices distinct; posterior cicatrices confluent; dorsal cicatrices placed rather below the centre of the cavity of the beaks; palleal cicatrix impressed anteriorly; cavity of the shell rather deep; cavity of the beaks rounded; nacre white and iridescent.

Remarks.—I have before me but a single specimen of this shell, and with older, younger or more perfect specimens, the characters are very likely to vary. In nearly all its characters it is most nearly allied to *U. obscurus*, (Nobis.) It differs in being less angular at the posterior margin, in being a thinner shell, and in having the teeth lamellar and thin. The colour of this specimen is white, while the *obscurus* is usually partly purplish.

Unio Reeveianus. Pl. XX. Fig. 28.

Testâ lævi, ellipticâ, inflatâ, valdè inequilaterali, posticè obtuso-angulatâ; valvulis tenuibus; natibus parvis, prominulis; epidermide luteâ, radiatâ; dentibus cardinalibus parvis, subobliquis; lateralibus longis, tenuibus subcurvisque; margaritâ albâ et iridescente.

Shell smooth, elliptical, inflated, very inequilateral, obtusely angular behind; valves thin; beaks small, a little prominent; epidermis yellowish, radiated; cardinal teeth small, rather oblique; lateral teeth long, thin and curved; nacre white and iridescent.

Hab. Alexandria, Louisiana, J. Hale, M. D., and Prof. Powell.
My cabinet and cabinets of Dr. Hale and Prof. Powell.

Diam. 1.1, Length 1.6, Breadth 2.9 inches.

Shell smooth, elliptical, inflated, very inequilateral, obtusely angular behind; substance of the shell thin, thicker before; beaks small and a little prominent; ligament rather long and somewhat thick; epidermis yellowish, shining, with numerous green rays over the posterior portion of the shell and distant lines of growth; posterior slope rather compressed into a carina; umbonial slope but slightly raised and rounded; cardinal teeth small, rather oblique, double in the right and slightly double in the left valve; lateral teeth long, thin, somewhat curved, widely separated from the cardinal teeth; anterior cicatrices distinct; posterior cicatrices confluent; dorsal cicatrices placed on the under side of the plate; palleal cicatrix impressed; cavity of the shell deep; cavity of the beaks rather shallow and subangular; nacre white and iridescent.

Remarks.—Among the many interesting shells sent to me by Dr. Hale and Prof. Powell, were two specimens which are now before me. The larger one, which is here figured, is apparently a male, the other a female. They differ much, the latter being much smaller, but apparently grown. It is very much broader on the posterior portion, and somewhat truncate. In colour and form of rays the two specimens are the same. Neither of them are by any means perfect, being much eroded towards the beaks, the character of which, in regard to undulations, cannot be ascertained. In general outline and characteristics, it is allied to *U. luteolus*, Lam. It is, however, thinner and lighter in the substance of the shell, and the rays are not so broad. The teeth, too, are smaller, and the lateral are much more removed from the cardinal ones. In the two specimens before me the division of the lateral teeth is remarkably short, not reaching more than half the length of the tooth.

I dedicate this species to Lovell Reeve, Esq., the able author of "Conchologia Iconica."

Unio luridus. Pl. XX. Fig. 29.

Testâ lævi, ellipticâ, compressâ, valdè inæquilaterali, posticè subbiangulatâ; valvulis subcrassis; natibus parvis, vix prominulis; epidermide tenebroso-bruneâ, striatâ, eradiatâ; dentibus cardinalibus parvis, acuminatis; lateralibus longis curvisque; margaritâ vel cæruleâ-albâ vel salmonis colore tinctâ.

Shell smooth, elliptical, compressed, very inequilateral, subbiangular behind; valves somewhat thick; beaks small, scarcely prominent; epidermis dark-brown, striate, without rays; cardinal teeth small, acuminate; lateral teeth long and curved; nacre bluish-white or salmon-coloured.

Hab. Coosawattee river, Murray county, Georgia, Dr. Boykin.
My cabinet.

Diam. .6, Length 1, Breadth 2 inches.

Shell smooth, elliptical, compressed, very inequilateral, subbiangular behind; substance of the shell somewhat thick; beaks small, scarcely prominent, placed towards the anterior margin; ligament rather long and thin; epidermis dark-brown, striate, without any apparent rays, with rather distant marks of growth; posterior slope rather compressed; umbonial slope very slightly raised into a scarcely visible angle; cardinal teeth small, acuminate, double in the left and single in the right valve; lateral teeth long, curved and enlarged at the posterior end; anterior cicatrices distinct; posterior cicatrices confluent; dorsal cicatrices placed above the centre of the cavity of the beaks; palleal cicatrices slightly impressed; cavity of the shell very shallow; cavity of the beaks exceedingly shallow and rounded; nacre bluish-white and salmon coloured.

Remarks.—Some half dozen of this small, unattractive species I owe to the kindness of my late friend, Dr. Boykin. Two of them are slightly salmon coloured, the others are bluish-white. It is somewhat like *U. complanatus;* but, in outline, it is more like *occultus*, (Nobis,) the beak is more terminal than in either, and the whole appearance of the shell reminds one of *U. arctior*, (Nobis,) but it is not so wide a shell. Several of the specimens are not so dark a brown as the others, but are inclined to dark-olive.

Unio Clarkianus. Pl. XXI. Fig. 30.

Testâ lævi, ellipticâ, convexâ, ad umbonis inflatâ, inequilaterali, posticè angulatâ; valvulis crassis; natibus subprominentibus, subrotundis; epidermide rufo-fuscâ, nitidâ; dentibus cardinalibus subcrassis, acuminatis, granulatis; lateralibus subbrevibus, crassis, arcuatis; margaritâ vel albâ vel salmonis colore tinctâ et iridescente.

Shell smooth, elliptical, convex, on the umbones inflated, inequilateral, angular behind; valves thick; beaks rather prominent, subrotund; epidermis reddish-brown, shining; cardinal teeth rather thick, acuminate, granular; lateral teeth rather short, thick and arched; nacre white or salmon coloured and iridescent.

Hab. Williamsport, Tenn., Mr. Jos. Clark; Georgia or Alabama, Mr. C. M. Wheatley.
My cabinet and cabinets of Mr. Clark and Mr. Wheatley.

Diam. 1, Length 1.4, Breadth 2.2 inches.

Shell smooth, elliptical, convex, on the umbones inflated, inequilateral, angular behind; substance of the shell thick, thinner behind; beaks rather prominent, subrotund, submedial; ligament short and thick; epidermis reddish-brown, shining, with rather close, distinct marks of growth; posterior slope wide, and rather depressed; umbonial slope very obtusely angular; cardinal teeth rather thick, acuminate, granular, single in the right and double in the left valve; lateral teeth rather short, thick, arched, thicker towards the posterior end, separated from the cardinal teeth; anterior cicatrices distinct; posterior cicatrices confluent; dorsal cicatrices placed nearly in the centre of the cavity of the beaks; cavity of the shell deep and rounded; cavity of the beaks deep and angular; nacre white or salmon-coloured.

Remarks.—There are two specimens before me of nearly the same size; that from Williamsport is slightly salmon-coloured in the cavity of the shell, and has rays over nearly the whole disk. The other has no rays whatever. This species is allied to *U. crocatus*, (Nobis,) but is a larger, thicker and more regularly oval shell.

I name it in honour of my friend Mr. Joseph Clark, of Cincinnati.

UNIO FLORIDENSIS. Pl. XXI. Fig. 31.

Testâ lævi, obovatâ, subtransversâ, subcompressâ, valdè inæquilaterali, anticè angustâ, posticè sublatâ; valvulis tenuibus; natibus prominulis, fere terminalibus; dentibus cardinalibus parvis; lateralibus longis subcurvisque; margaritâ albâ.

Shell obovate, rather wide, somewhat compressed, very inequilateral, narrow before and rather broad behind; valves thin; beaks somewhat prominent, nearly terminal; cardinal teeth small; lateral teeth long and slightly curved; nacre white.

Hab. Chácktáhachi river, West Florida, Major Le Conte.
Cabinet of Major Le Conte.

Diam. .9, Length 1.5, Breadth 3 inches.

Shell reversely ovate, transverse, rather compressed, very inequilateral, narrow before and broad behind; substance of the shell thin, thickened before; beaks rather small and somewhat prominent; placed near to the anterior margin; ligament long and rather thick; epidermis light-yellow, with equal, somewhat distant lines of growth, apparently without rays; cardinal teeth very small, lobed, double in both valves; lateral teeth very long, very thin, and slightly curved; anterior cicatrices distinct; posterior cicatrices confluent; dorsal cicatrices placed in the centre of the cavity of the beaks; cavity of the shell rather shallow; cavity of the beaks shallow and subangular; nacre white.

Remarks.—This is a species very distinct from any which I have seen. Its obovate form, while it is so wide, is very unusual. It cannot be confounded with *U. modioliformis*, (Nobis,) which is a thinner shell, rayed and much inflated. The teeth are remarkably small, for the size of the shell, and the lateral one particularly attenuate. The epidermis is of the yellow colour and texture peculiar to *U. anadontoides*, (Nobis,) and *U. cariosus*, Say.

A single specimen only is under my inspection, and this is much eroded on the superior portion, leaving only false beaks. It is not, of course, possible to say whether the tips are undulate or not.

UNIO SUCCISSUS. Pl. XXI. Fig. 32.

Testâ lævi, subtriangulari, subcompressâ, inæquilaterali, tenebroso-fuscâ; valvulis subcrassis; natibus subprominentibus; dentibus cardinalibus magnis; lateralibus parvis subrectisque; margaritâ purpureâ et valdè iridescente.

Shell smooth, subtriangular, rather compressed, inequilateral, dark-brown; valves rather thick; beaks somewhat prominent; cardinal teeth large; lateral teeth nearly straight; nacre purple and very iridescent.

Hab. West Florida, Major Le Conte.

My cabinet and cabinets of Major Le Conte and Prof. Haldeman.

Diam. .7, Length 1.2, Breadth 1.7 inches.

Shell smooth, subtriangular, rather compressed, inequilateral, subangular behind and rounded before, subangular on the umbonial slope, dark-brown; beaks somewhat prominent and placed near the anterior margin; ligament very short and rather thin; epidermis dark-brown, with indistinct, rather distant lines of growth, smooth on the superior portion, striate and rather rough towards the margin, apparently without rays; cardinal teeth large, rather erect, double in both valves; lateral teeth rather short, thin, and very slightly curved; anterior cicatrices distinct; posterior cicatrices distinct; dorsal cicatrices placed on the inferior portion of the cardinal teeth, within the cavity of the beaks; cavity of the shell rather shallow; cavity of the beaks deep and angular; nacre purple, somewhat clouded, and very iridescent.

Remarks.—A single specimen of this species was sent to me by Major Le Conte. The beaks, being eroded, do not present the means of ascertaining if this be undulate at the tip. The general outline approaches very closely to *U. rubiginosus*, (Nobis,) but it is rather more carinate on the posterior slope, and more compressed on the anterior portion of the shell. It differs entirely from that species in its nacre, belonging, in regard to colour, to the *complanatus* group, which varies so much in purple, white and salmon. The specimens before me are not of a deep purple, but rather pale, and clouded with white. The margin and teeth are the darkest. In other individuals the colour may be found to vary from dark-purple to white.*

Prof. Haldeman's specimen is less triangular. It also came from Major Le Conte.

UNIO OREGONENSIS. Pl. XXII. Fig. 33.

Testâ lævi, ellipticâ, subinflatâ, subinæquilaterali,posticè obtusè angulatâ; valvulis crassis; natibus subprominentibus; epidermide tenebroso-olivaceâ, rugosâ, valdè striatâ, obsoletè radiatâ; dentibus cardinalibus magnis, obliquis, compressis et valdè crenulatâ; lateralibus longis, subcrassis curvatisque; margaritâ albâ et iridescente.

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* Since the above was written, I have seen, in Mr. Wheatley's collection, two specimens from New Orleans, both of which are white.

Shell smooth, elliptical, somewhat inflated, inequilateral, obtusely angular behind; valves thick, beaks somewhat prominent; epidermis dark-olive, rough, very much striate, obsoletely radiated; cardinal teeth large, oblique, compressed and much crenulated; lateral teeth long, rather thick and curved; nacre white and iridescent.

Hab. Columbia river, Oregon, Mr. C. M. Wheatley.

Diam. .8, Length 1.2, Breadth 2.1 inches.

Shell smooth, elliptical, somewhat inflated, inequilateral, obtusely angular behind; substance of the shell thick, thinner behind; beaks somewhat prominent, submedial; ligament rather short and somewhat thick; epidermis dark-olive, very rough, and striate over the whole disk, with very obscure, rather thin rays; posterior slope somewhat compressed; umbonial slope obtusely angular; cardinal teeth large, oblique, compressed and much crenulated, double in the left and single in the right valve; lateral teeth long, rather thick, curved, enlarged at the posterior end and separated from the cardinal tooth; anterior cicatrices distinct; posterior cicatrices distinct; dorsal cicatrices placed obliquely on the inner portion of the cardinal tooth and under the plate; palleal cicatrix impressed; cavity of the shell rather shallow; cavity of the beaks shallow and subangular; nacre white and iridescent.

Remarks.—I owe to the kindness of Mr. Wheatley one of the two specimens before me. It is a species very distinct from any I am acquainted with. The roughness of the exterior is remarkable, and would indicate its inhabiting near to brackish waters. It is not usual to see a rough shell like this with rays. In those specimens which are eroded and old, they are indistinct; but I suspect that when perfect the rays might be very distinct. In outline, it is somewhat like a young *U. ligamentinus*, Lam., (*crassus*, Say,) and the nacre is of the same pure white, but the surface is totally different, being rough, and the form more transverse. In its elliptical outline it comes closer to *U. Sapotalensis*, (Nobis,) but is a smaller shell, and differs much in the rays and the surface.

UNIO RUMPHIANUS. Pl. XXII. Fig. 34.

Testâ tuberculatâ, quadratâ, subinflatâ, subinæquilaterali, posticè truncatâ, ad basim emarginatâ; valvulis percrassis; natibus crassis, prominentibus; epidermide rufo-fuscâ, substriatâ; dentibus cardinalibus percrassis striatisque; lateralibus brevibus rectisque; margaritâ argenteâ et iridescente.

Shell tuberculate, quadrate, somewhat inflated, rather inequilateral, truncate behind, emarginate at the basal margin; valves very thick; beaks thick and prominent; epidermis reddish-brown, substriate; cardinal teeth very thick and striate; lateral teeth short and straight; nacre silver white and iridescent.

Hab. West Georgia? Dr. Budd.
Cabinet of Dr. Budd, New York.

Diam. 1.1, Length 1.7, Breadth 2 inches.

Shell tuberculate, quadrate, somewhat inflated, rather inequilateral, truncate behind, emarginate at the basal margin, raised over the umbonial slope and grooved from beaks to basal margin; substance of the shell very thick, thinner behind; beaks thick, submedial and prominent; ligament short and thick; epidermis reddish-brown, somewhat striate, with distinct, proximate marks of growth; posterior slope compressed, raised into a carina and covered with curved rows of tubercles; umbonial slope raised into a widening ridge, which enlarges the posterior basal margin; cardinal teeth very large, thick, spread out, and deeply striate; lateral teeth short, thick, straight, with a large, flat plate separating them from the cardinal teeth; anterior cicatrices distinct and deeply impressed; posterior cicatrices confluent; dorsal cicatrices placed on the inner side of the plate; palleal cicatrix impressed; cavity of the shell rather deep and small; cavity of the beaks very deep and angular; nacre silvery white and iridescent.

Remarks.—A single valve only was in the collection of Dr. Budd, and he thinks it came from the west of Georgia. I have had it in my possession for several years, and deferred describing it in the hope of getting more specimens; but in comparing it with its allied species, *metanever*, Raf., *tuberosus*, (Nobis,) and *sparsis*, (Nobis,) I have found it too different in outline and some other characters to place it with either. It is much more enlarged on the posterior slope, which is almost winged, and it is without a groove on that part, which the other three have. In this specimen the groove over the middle of the valve is deeper than in the other species. The anterior portion is more enlarged than in the others, and it has many rather low tubercles, the general character of which, over the whole disk, is rather depressed and smooth. In the *tuberosus* and *metanever* the tubercles are generally more raised and roughened. The tubercles on the posterior slope in this specimen arrange themselves in curved rows, which, running to the margin, make it crenulate.

The lateral teeth are remarkably short, straight, and very thick. The intervening plate between the cardinal and lateral teeth is exceedingly large and very flat.

I dedicate this species to the memory of Rumphius, the author of "D'Amboinsche Rariteitkamer."

Unio sagittiformis. Pl. XXII. Fig. 35.

Testâ lævi, valdè transversâ, compressâ, ad latere planulatâ, valdè inæquilaterali, posticè acutè angulatâ; valvulis subtenuibus; natibus parvis, prominulis, ad apices undulatis; epidermide virido-fuscâ, radiatâ; dentibus cardinalibus parvis, compressis, crenulatis; lateralibus prælongis subrectisque; margaritâ purpureâ et iridescente.

Shell smooth, very wide, compressed, flattened at the side, very inequilateral, acutely angular behind; valves rather thin; beaks small, slightly prominent, undulated at the tip; epidermis greenish-brown, rayed; cardinal teeth small, compressed, crenulate; lateral teeth very long and nearly straight; nacre purple and iridescent.

Hab. Oconee river, near Athens, Georgia, Major Le Conte.
My cabinet and cabinet of Major Le Conte.

Diam. .6, Length 1.2, Breadth 2.7 inches.

Shell smooth, very wide, compressed, flattened at the side, very inequilateral, acutely angular behind; substance of the shell thin; beaks small, slightly prominent, undulated at the tip and placed towards the anterior margin; ligament long and thin; epidermis brownish, with numerous broad, dark-green rays, covering the whole disk, with rather distant lines of growth; posterior slope somewhat compressed, with a single raised line passing from the beak to the posterior margin; umbonial slope rather acutely angular; cardinal teeth rather small, compressed, crenulate, double in both valves; lateral teeth long, nearly straight, and thickened at the posterior end; anterior cicatrices distinct; posterior cicatrices confluent; dorsal cicatrices placed nearly in the centre of the cavity of the beaks; palleal cicatrix impressed; cavity of the shell very shallow; cavity of the beaks shallow and rounded; nacre purple and iridescent.

Remarks.—I have before me two specimens of this species, which belongs to the group of which the *U. nasatus*, Say, may be considered the type. Its form and appearance is altogether graceful. It perhaps more closely resembles *Fisherianus*, (Nobis,) than any other species, but may be distinguished in being rather less wide, and it differs in having broader rays. In outline, it resembles *U. Barrattianus*, (Nobis,) but it is a wider shell, and not so thick. The two specimens I have are both of a fine purple; others may differ, and it may be found white and salmon colour.

UNIO STEWARDSONII. Pl. XXIII. Fig. 36.

Testâ lævi, triangulari, compressâ, inæquilaterali, posticè emarginatâ, ad basim prælongâ, ad laterè planulatâ; valvulis crassis; natibus prominulis; epidermide luteo-fuscâ, radiatâ; dentibus cardinalibus subcrassis, crenulatis; lateralibus brevissimis, crassis, crenulatis rectisque; margaritâ argenteâ et iridescente.

Shell smooth, triangular, compressed, inequilateral, emarginate behind, prolonged at the base and flattened at the side; valves thick; beaks rather prominent; epidermis yellowish-brown, radiated; cardinal teeth rather thick, crenulate; lateral teeth very short, thick and straight; nacre silvery white and iridescent.

Hab. Chatanooga river, Tenn., Thomas Stewardson, M. D.
Cabinet of the Academy of Natural Sciences.

Diam. .6, Length 1, Breadth 1.2 inches.

Shell smooth, triangular, compressed, inequilateral, emarginate behind, enlarged and extended circularly at the base, flattened at the side; substance of the shell thick, thinner behind; beaks rather prominent; ligament short and rather thin; epidermis yellowish dull-brown, with numerous capillary rays over most of the disk, and with distant marks of growth; posterior slope flattened and lighter in colour; umbonial slope obtusely angular; cardinal teeth rather thick, crenulate, double in both valves; lateral teeth very short, crenulate, thick, nearly straight, and thickened at the posterior end; anterior cicatrices distinct; posterior cicatrices distinct; dorsal cicatrices placed near to the margin and almost in connexion with the cardinal tooth; palleal cicatrix impressed; cavity of the shell very shallow; cavity of the beaks shallow and subangular; nacre silvery white and iridescent.

Remarks.—Among many interesting specimens of some twenty species, brought by Dr. Stewardson, was a single specimen of this species. It is very closely allied to the *Unio foliatus*, Hild., and at first I did not hesitate to consider it as a small specimen of the female of that species, but a very slight examination of the enlargement of that portion of the shell which indicates the female character, satisfied me that it could not be the same. In the *foliatus* the enlargement for the oviducts is always a continuation and enlargement of the ridge over the middle of the disk; and immediately before this there is, in the mature female, a deep indentation. In the *Stewardsonii* this emarginate part is replaced by *the enlargement*, and instead of being indented at the posterior basal margin, it really is there enlarged. The position, therefore, of the oviducts of the animal, which I have not seen, must be different. Judging from this single specimen, I should think it will prove to be a much smaller species than the *foliatus* of the Ohio.

I name it after Dr. Stewardson, to whose exertions we are indebted for its discovery.

UNIO HANLEYIANUS. Pl. XXIII. Fig. 37.

Testâ lævi, obliquâ, tumidâ, valdè inæquilaterali, posticè angulatâ; valvulis percrassis; natibus grandibus, tumidis; epidermide bruneo-olivâ, striatâ, eradiatâ; dentibus cardinalibus parvis, pyramidatis; lateralibus brevis rectisque; margaritâ albâ et iridescente.

Shell smooth, oblique, swollen, very inequilateral, angular behind; valves very thick; beaks large and swollen; epidermis brownish-olive, striate, without rays; cardinal teeth small, pyramidal; lateral teeth short and straight; nacre white and iridescent.

Hab. Coosawattee river, Murray county, Georgia. Dr. Boykin.
My cabinet.

Diam. .8, Length .9, Breadth 1.4 inches.

Shell smooth, oblique, swollen, very inequivalve, angular behind; substance of the shell very thick, much thinner behind; beaks large, swollen and placed towards the anterior margin; ligament short and thin; epidermis brownish-olive, striate, without rays and with close marks of growth; posterior slope wide and rather depressed; umbonial slope raised, very obtusely angular; cardinal teeth small, pyramidal, single in the right, and double in the left valve; lateral teeth short, straight and in a direction much above the cardinal tooth; anterior cicatrices distinct and deeply impressed; posterior cicatrices distinct; dorsal cicatrices on the under side of the plate; palleal cicatrix impressed; cavity of the shell deep and irregularly oval; cavity of the shell shallow and obtusely angular; nacre white and iridescent.

Remarks.—Three or four specimens are before me, differing very little from each other. The marks of growth are unusually close together, and are much darker than the interspace, which is brownish-olive. It is a pretty little species, and is allied to *U. decisus*, (Nobis,) and *scalenius*, Raf., and approaches *U. pulvinulus*, (Nobis.) It differs from the first in not having the beaks so terminal, and not being so much swollen on the anterior portion of the disk; from the second, in not having the beaks so terminal, in being more oval and in being without rays. From the last it differs in being less rounded, of a lighter colour, and having the marks of growth closer.

I dedicate this species to Sylvanus Hanley, Esq., one of the authors of "History of British Mollusca," &c.

UNIO PLACITUS. Pl. XXIII. Fig. 38.

Testâ lævi, ellipticâ, subinflatâ, inæquilaterali, posticè subangulatâ; valvulis subcrassis; natibus subprominentibus, rotundatis; epidermide castaneâ, nitidâ, obsoletè radiatâ; dentibus cardinalibus subparvis, compressis, per obliquis, crenulatis; lateralibus sublongis, lamellatis curvisque; margaritâ salmonis colore tinctâ.

Shell smooth, elliptical, rather inflated, inequilateral, subangular behind; valves a little thick; beaks somewhat prominent, rounded; epidermis chestnut-coloured, shining, obsoletely rayed; cardinal teeth rather small, compressed, very oblique, crenulate; lateral teeth rather long, lamellar and curved; nacre salmon coloured.

Hab. Alabama, Mr. C. M. Wheatley.
Cabinet of Mr. Wheatley.

Diam. .5, Length .8, Breadth 1.3 inches.

Shell smooth, elliptical, rather inflated, inequilateral, angular behind; substance of the shell a little thick; beaks somewhat prominent, rounded, ligament short and thin; epidermis chestnut-coloured, shining, obsoletely rayed, with rather distant marks of growth; posterior slope rather depressed; umbonial slope slightly raised and round, cardinal teeth rather small, compressed, very oblique, crenulate and double in both valves; lateral teeth rather long, lamellar, curved and separated from the cardinal teeth; anterior cicatrices distinct; posterior cicatrices confluent; dorsal cicatrices placed on the under side of the plate; cavity of the shell rather deep and regularly oval; cavity of the beaks small and subangular; nacre salmon coloured.

Remarks.—This is a small, regular and pretty-looking shell, of which only one specimen was in Mr. Wheatley's collection. I could not place it in any species known to me. It may not be a fully grown specimen. It is nearest in outline to *U. constrictus*, Con., in those specimens where the margin is not constricted, which is often the case. It differs from it in being a thicker shell, more regularly oval, and being fuller on the umbones and on the umbonial slope. In the rays it also differs, having fewer, and these being more distant. It is also rounder on the posterior margin. The nacre of the specimen before me is of a pale salmon colour, inclining to rose. Other specimens will be likely to vary in colour.

Unio Troschelianus. Pl. XXIII. Fig. 39.

Testâ lævi, subobliquâ, convexiusculâ, inæquilaterali, posticè subangulatâ; valvulis crassis; natibus subgrandibus; epidermide bruneo-olivâ, striatâ, eradiatâ; dentibus cardinalibus parvis, granulatis; lateralibus brevis, crassis rectisque; margaritâ albâ et iridescente.

Shell smooth, suboblique, somewhat convex, inequilateral, subangular behind; valves thick; beaks rather large; epidermis brownish-olive, striate, without rays; cardinal teeth small, granulate; lateral teeth short, thick and straight; nacre white and iridescent.

Hab. Coosawattee river, Murray county, Georgia, Dr. Boykin.
My cabinet.

Diam. .7, Length 1.1, Breadth 1.5 inches.

Shell smooth, rather oblique, somewhat convex, inequilateral, subangular behind, rounded before; substance of the shell thick, thinner behind; beaks rather large, submedial; ligament rather short and thin; epidermis brownish-olive, striate, without rays, and with very close marks of growth; posterior slope somewhat compressed; umbonial slope rounded; cardinal teeth small, granulate, single in the right and double in the left valve; lateral teeth short, thick and straight; anterior cicatrices distinct, posterior cicatrices distinct; dorsal cicatrices placed on the under side of the plate; palleal cicatrix well impressed; cavity of the shell rather shallow and rounded; cavity of the beaks very shallow and obtusely angular; nacre white and iridescent.

Remarks.—Several specimens are before me, neither of which have perfect beaks.

Whether there be undulations at the tips it is impossible to say. In outline, it is somewhat like *U. Ravenelianus*, (Nobis,) but it is less oblique and less compressed. It is also allied to *U. nucleopsis*, Con., but that is quite round in the outline, while the former is rather oblique. It is also much more compressed.

I dedicate this species to M. Troschel, who has done much in the anatomy of this family.

UNIO KEINERIANUS. Pl. XXIII. Fig. 40.

Testâ tuberculatâ, subrotundatâ, subinflatâ, subequilaterali; valvulis crassis; natibus prominentibus, submedialis; epidermide luteolâ, substriatâ; dentibus cardinalibus grandibus, granulatis crassisque; lateralibus brevis, crassis subrectisque; margaritâ albâ et iridescente.

Shell tuberculate, subrotund, somewhat inflated, subequilateral; valves thick, beaks prominent, submedial; epidermis yellowish, somewhat striate; cardinal teeth large, granulate and thick; lateral teeth short, thick and nearly straight; nacre white and iridescent.

Hab. Coosawattee river, Murray county, Georgia, Dr. Boykin.
My cabinet.

Diam. .7, Length 1.1, Breadth 1.3 inches.

Shell sparsely tuberculate, subrotund, somewhat inflated, nearly equilateral, rounded behind; substance of the shell thick, rather thinner behind; ligament short and rather thick; epidermis yellowish, somewhat striate near the margin, with very close marks of growth; posterior slope wide and but slightly raised; umbonial slope rounded; cardinal teeth large, granulate, thick, double in the left and somewhat trifid in the right valve; lateral teeth short, thick, nearly straight, far removed from, and in a direction far above the cardinal tooth, leaving a large plate between the two teeth; anterior cicatrices distinct; posterior cicatrices distinct; dorsal cicatrices in a row under the cardinal teeth; palleal cicatrix well impressed; cavity of the shell moderately deep; cavity of the beaks deep and angular; nacre white and iridescent.

Remarks.—I very much regret that I have not better specimens of this species. The four before me are all worn in the beaks more or less, and two of them are quite old and eroded. The two younger ones only have rays. The older of these, here figured, has a broad, green ray over the middle and anterior portion of the disk, and two small ones on the posterior slope. On the youngest specimen, about one-fourth grown, there is no tubercle; on the others they are very few and very small, and placed towards the margin. These are so small as scarcely to deserve the name. This species belongs to the group of which *U. pustulosus*, (Nobis,) may be considered the type. It differs from that shell in being rounder and having fewer tubercles, in being less angular behind and more rounded before. It is allied to *U. Schoolcraftensis*, (Nobis,) but that is more quadrate, having quite a compressed carina, but resembles it in having few tubercles. The two oldest specimens are slightly impressed before the umbonial slope and are subangular behind.

I dedicate it to Mr. L. C. Keiner, the author of "Spécies Général et Icon. Coquil. Vivantes."

UNIO INGALLSIANUS. Pl. XXIV. Fig. 41.

Testâ lævi, transversâ, inflatâ, cylindraceâ, posticè acuto-angulatâ, e natibus posticè bilineatis; valvulis subtenuibus; natibus subprominentibus; epidermide tenebroso-olivaceâ, striatâ; dentibus cardinalibus prælongis, laminatis et in valvulâ dextrâ solum duplicibus; lateralibus longis, laminatis, rectis; margaritâ cæruleo-albâ et valdè iridescente.

Shell smooth, transverse, inflated, cylindrical, acutely angular behind, with two lines posteriorly from the beaks; valves rather thin; beaks rather prominent; epidermis dark-olive, striate; cardinal teeth very long, lamelliform, straight and in the right valve only double; lateral teeth long, lamelliform, straight; nacre bluish-white and very iridescent.

Hab. Siam, Thomas R. Ingalls, M. D.
My cabinet and cabinet of Dr. Ingalls.

Diam. .7, Length .8, Breadth 1.9 inches.

Shell smooth, very transverse, inflated, cylindrical, acutely angular behind, obtusely rounded before, with two minute, slightly elevated lines running from the beaks towards the posterior margin, on the posterior slope flattened, near the basal margin slightly compressed; substance of the shell rather thin; beaks rather prominent, submedial; ligament short and rather thick; epidermis dark-olive, dull, striate over the whole disk, without rays; umbonial slope obtusely angular; cardinal teeth very long, lamelliform, straight, and in the *right valve* only, double; lateral teeth long, lamelliform, straight and double in the left valve; anterior cicatrices confluent; posterior cicatrices confluent; dorsal cicatrices placed on the plate immediately over the centre of the cavity of the beaks; cavity of the shell deep and rounded; cavity of the beaks rather shallow and rounded; nacre bluish-white, pearly and iridescent.

Remarks.—This very interesting shell was sent to me by Dr. Ingalls, of Greenwich, N.Y. It was the only new one among several he received from Siam. To his kindness for this and other species, I am indebted, and I dedicate it to him. The form is very unusual, and assimilates to the *U. Caillaudii*, Fer., from Egypt. The colour is of the same dull olive. It may be distinguished in the exterior by its being less cylindrical and more angular behind; and in the interior, by the peculiar form of the cardinal teeth, which are long and lamelliform and double in the *right* valve, while in the *Caillaudii* they are short, erect, and double in the left valve. The beaks are also much more medial. The nacre is of an uncommonly fine pearly character, and in this specimen it is delicately striate from the cavity of the beaks towards the margin. In the description, it may be observed that I have stated the anterior cicatrices to be confluent, a rather unusual character in the *Uniones*. Of the smaller under cicatrix there is no appearance in this specimen, but it may be embraced in the large one. There is, however, a very distinct cicatrix *above* the large one. It is much to be regretted that the soft parts were not preserved, as the peculiar cardinal teeth and muscular cicatrices indicate a different disposition of the muscular fibres of the adductor and retractor muscles. The enlargement on the posterior portion of the disk towards the basal margin, indicates the female character of this specimen.

Unio nigellus. Pl. XXIV. Fig. 42.

Testâ lævi, ellipticâ, anticè compressâ, valdè inæquilaterali, posticè obtuso-biangulatâ; valvulis tenuibus; natibus prominulis; epidermide nitidâ, nigrâ; dentibus cardinalibus parvis, acuminatis, crenulatis; lateralibus prælongis curvisque; margaritâ cæruleo-albâ et valdè iridescente.

Shell smooth, elliptical, compressed before, very inequilateral, obtusely biangular behind; valves thin; beaks a little prominent; epidermis shining, black; cardinal teeth small, pointed, crenulate; lateral teeth long and curved; nacre bluish-white and very iridescent.

Hab. Chatahoochee river, near Columbia, Georgia, Dr. Boykin.
My cabinet.

Diam. .5, Length .9, Breadth 1.6 inches.

Shell smooth, elliptical, compressed before, very inequilateral, obtusely biangular behind; substance of the shell thin, thicker before; beaks a little prominent and placed near to the anterior margin; ligament rather long and thin; epidermis shining, black, with distant marks of growth; posterior slope rather compressed, and with an indented line from the beaks to the margin; umbonial slope inflated and rounded; cardinal teeth small, pointed, crenulate; lateral teeth long, curved and removed from the cardinal teeth; anterior cicatrices distinct; posterior cicatrices confluent; dorsal cicatrices placed above the centre of the cavity of the beaks; palleal cicatrix impressed; cavity of the shell rather deep; cavity of the beaks shallow and subangular; nacre white and beautifully iridescent.

Remarks.—A single specimen of this species was received by me some years ago, from my late friend, Dr. Boykin, to whose kindness I owe many interesting and new species from the fruitful locality of Columbia. Having never been able to obtain other specimens, I have delayed until now its description. Older or younger specimens may present different characters. This specimen is in good condition, but the beaks are not perfect, and in younger and perfect specimens, the epidermis may not be so dark as this. It is allied to *U. occultus*, (Nobis,) but is not so compressed nor so high in the carina. The *occultus* is also much more rayed.

Unio nux. Pl. XXIV. Fig. 43.

Testâ lævi, ellipticâ, convexâ, subinæquilaterali, posticè subangulatâ; valvulis percrassis; natibus prominentibus, rotundatis; epidermide tenebroso-fuscâ, radiatâ; dentibus cardinalibus subgrandibus; lateralibus brevis rectisque; margaritâ argenteâ et iridescente.

Shell smooth, elliptical, convex, somewhat inequilateral, subangular behind; valves very thick; beaks prominent, rounded; epidermis dark-brown, radiated; cardinal teeth rather large; lateral teeth short and straight; nacre very white and iridescent.

Hab. Alabama river, Mr. Wheatley.
My cabinet and cabinets of Dr. Budd and Mr. C. M. Wheatley, New York.

Diam. .6, Length .8, Breadth, 1.1 inches.

Shell smooth, elliptical, convex, somewhat inequilateral, rounded before, subangular behind; substance of the shell very thick, much thinner behind; beaks prominent, inflated towards the umbo; ligament very short and rather thick; epidermis dark-brown, obscurely radiated, yellow on the posterior slope, with a single curved ray from the beak to the margin, marks of growth rather distant and distinct; umbonial slope obtusely angular; cardinal teeth rather large, double in the right and single in the left valve, crenulate, pointed; lateral teeth short and straight; anterior cicatrices distinct; posterior cicatrices distinct; dorsal cicatrices small and placed on the under side of the plate between the cardinal and lateral teeth; cavity of the shell deep and rounded; cavity of the beaks rather deep and angular; nacre very white and very iridescent on the posterior portion of the valve.

Remarks.—There are three specimens before me of this small species. The largest is scarcely an inch wide, but may not be entirely mature. It looks somewhat like *U. decisus*, (Nobis,) but may be distinguished by its colour and by the place and form of the beak. It is not an oblique species, but in outline more like *U. glans*, (Nobis.) In the yellow colour of the posterior slope it resembles *U. ebenus*, (Nobis,) but it is not so rotund as that shell, and has the beaks more medial. The posterior portion of the valve is remarkably thin for so thick a species, and the nacre uncommonly pearly and iridescent.

UNIO NIGRINUS. Pl. XXIV. Fig. 44.

Testâ lævi, obovatâ, subinflatâ, inæquilaterali, nigrâ; valvulis tenuibus; natibus subprominentibus; dentibus cardinalibus parvis, acuminatis; lateralibus longis curvisque; margaritâ subpurpureâ et iridescente.

Shell smooth, obovate, somewhat inflated, inequilateral, black; valves thin; beaks slightly prominent; cardinal teeth small, pointed; lateral teeth long and curved; nacre somewhat purple and iridescent.

Hab. West Florida, Major Le Conte.
Cabinet of Major Le Conte.

Diam. .7, Length 1.1, Breadth 1.9 inches.

Shell smooth, reversely ovate, somewhat inflated, inequilateral, rounded before and behind, black; substance of the shell thin; beaks slightly prominent and approaching the anterior margin; ligament short and very thin; epidermis smooth, somewhat shining, black, with very indistinct rays and approximate lines of growth; cardinal teeth small, double in both valves, pointed and more acuminate on the anterior division; lateral teeth long, thin and curved; anterior cicatrices distinct; posterior cicatrices confluent; dorsal cicatrices placed in the centre of the cavity of the beaks; cavity of the shell rather deep and rounded; cavity of the beaks shallow and slightly angular; nacre somewhat purple and very iridescent posteriorly.

Remarks.—A single specimen of this species, not very perfect, and eroded at the beaks, was among the West Florida shells from Major Le Conte. In outline, it approaches *U. amygdalum*, (Nobis,) but differs in being a larger shell, thinner, black on the outside and purple within. It is not so purple as the *U. cuprinus*, (Nobis,) nor is it so light in the epidermis. It is also nearly allied to *U. occultus*, (Nobis,) but is not so wide a species and is rounder on the umbonial slope.

Anodonta denigrata. Pl. XXV. Fig. 45.

Testâ lævi, ellipticâ, convexiusculâ, inæquilaterali, anticè rotundatâ; valvulis tenuibus; natibus prominulis, ad apices undulatis; epidermide politâ, bruneo-nigricente, obsoletè radiatâ; margaritâ cæruleâ albâ et iridescente.

Shell smooth, elliptical, somewhat inflated, inequilateral, rounded before; valves thin, beaks slightly prominent, undulated at the tip; epidermis polished, blackish-brown, obscurely rayed; nacre bluish-white and iridescent.

Hab. Campbell county, East Tennessee, President Estabrook.
My cabinet and cabinet of President Estabrook.

Diam. .8, Length 1.2, Breadth 2.2 inches.

Shell smooth, elliptical, somewhat inflated, inequilateral, rounded before and very slightly flattened on the anterior part, with a slightly curved dorsal line a little irregular near the point of the beak; substance of the shell thin, very slightly thicker and whiter before; beaks very small and very slightly prominent, rather concentrically undulate at the tip; ligament thin and rather long; epidermis polished, blackish-brown, sometimes dark-greenish-brown, and obtusely rayed, with distant marks of growth. Posterior slope rather wide, and not much compressed; with three rather obscure dark-green rays, from the beak to the posterior margin; umbonial slope rounded and but slightly raised; anterior cicatrices confluent; posterior cicatrices confluent; dorsal cicatrices immediately above the centre of the cavity of the beaks; cavity of the shell not very deep, oval; cavity of the beaks very shallow and rounded; nacre bluish-white and iridescent.

Remarks.—This is rather a small species, of which President Estabrook sent me some dozen specimens. It is a distinct species, and more nearly allied to *An. Ferussaciana*, (Nobis,) than to any other species. It differs in being a smaller species, in being more compressed, and in having a much less callus on the dorsal margin. Indeed, in some of the specimens no callus can be perceived. The undulations of the beaks are simple and nearly concentric, like the *Ferussaciana*, but they are smaller. In all the specimens but a half-grown one, there is a rough, opake, white, carious mark of disease about the anterior cicatrix and the cavity of the beaks. The younger one is without this mark of disease. This specimen is greenish, and has the lines of growth very distinctly marked.

Anodonta opaca. Pl. XXV. Fig. 46.

Testâ lævi, ellipticâ, subinflatâ, inæquilaterali, posticè angulatâ; valvulis tenuibus; natibus subprominentibus, ad apices undulatis; epidermide opacâ, nigricente, obsoletè radiatâ; margaritâ albâ et iridescente.

Shell smooth, elliptical, rather inflated, inequilateral, angular behind; valves thin, beaks rather prominent, undulate at the tip; epidermis dark, almost black, obscurely rayed; nacre white and iridescent.

Hab. Near New Orleans, Mons. Janin. Little Rock, Arkansas, Prof. Powell.
My cabinet and cabinets of Prof. Powell and Dr. Hale.

Diam. 1.5, Length 2.1, Breadth 3.4 inches.

Shell smooth, elliptical, rather inflated, inequilateral, angular behind, slightly curved on the dorsal line; substance of the shell thin; beaks rather prominent and undulated at the tip; ligament rather short and somewhat thick; epidermis dark, almost black, coarsely striate, obscurely rayed, with distant lines of growth; posterior slope wide, very dark, and with obscure rays; umbonial slope very obscurely angular; anterior cicatrices confluent; posterior cicatrices confluent; dorsal cicatrices placed anterior to the cavity of the beaks; palleal cicatrix scarcely perceptible; cavity of the shell rather deep and oval; cavity of the beaks rather shallow and rounded; nacre white and iridescent.

Remarks.—I have had several specimens of this species many years, and have had great difficulty where to place it. It is nearest allied to *An. fluviatilis*,—a species which has a most remarkably extended geographical range; but it seems to me to differ too much to retain it in that species. It differs in being less transverse, in the beaks being more medial, and in the epidermis being darker. It is also a little more enlarged on the umbonial slope. Being always very desirous to keep the number of our species as limited as possible, I very often defer for years describing specimens as new, which I cannot place satisfactorily with those already characterized. More recently, I have received from Prof. Powell several specimens of the same characteristics, from Little Rock, and I think it will be found by the naturalists of Louisiana and Arkansas, whence it comes, that the characters will be found constantly to differ enough to distinguish it from *fluviatilis*, which flourishes more than any other Anodonta in the middle states.

ANODONTA CALIFORNIENSIS. Pl. XXV. Fig. 47.

Testâ subalatâ, lævi, ellipticâ, subinflatâ, posticè rotundatâ; valvulis tenuibus; natibus minutis, ad apices undulatis; epidermide virido-olivaceâ, nitidâ; margaritâ albâ et iridescente.

Shell subalate, smooth, elliptical, somewhat inflated, rounded behind; valves thin, beaks very small and undulated at the tips; epidermis olive-coloured, shining; nacre white and iridescent.

Hab. Rio Colorado, California, J. L. Le Conte, M. D.
My cabinet and cabinet of Major Le Conte.

Diam. .8, Length 1.3, Breadth 2.2 inches.

Shell subalate, smooth, elliptical, somewhat inflated, rounded behind, slightly compressed towards the anterior basal margin; substance of the shell thin and fragile, beaks very small, scarcely rising above the dorsal line, finely undulate at the tip; ligament rather short and thin; epidermis virido-olivacea, shining, with rather distant marks of growth; posterior slope rather broad, compressed and raised nearly into a wing, with three distinct green rays from the beak to the margin; umbonial slope inflated and rounded; anterior cicatrices distinct; posterior cicatrices confluent; dorsal cicatrices nearly in the centre of the beaks; palleal cicatrix scarcely visible; cavity of the shell rather deep; cavity of the beaks exceedingly shallow; nacre white.

Remarks.—Dr. Le Conte procured but two or three specimens of this, which was the only species of the family Naïades he saw in California. This marks a very singular difference in the existence of these forms of animal life, from those in the waters of the more eastern states, where they exist in such profusion, and in such a great number of various forms and habits. This species is more nearly allied, indeed it is closely allied to *An. Nuttalliana*, which I described many years since, and which was brought by Mr. Nuttall from

Wahlamat river, in Oregon. It differs in being a smaller species, in being more inflated, and particularly so in the superior part. In this shell the umbonial slope is smaller from the beaks to the posterior dorsal margin. In the *Nuttalliana* the upper portion of the umbonial slope is flattened, but it enlarges towards the posterior basal margin, and there makes the greater diameter. In the *Californiensis* the greatest diameter is about the middle of the disk, and there is a marked difference in the wing, which is by no means so much elevated.

Anodonta Trautwiniana. Pl. XXVI. Fig. 48.

Testâ lævi, oblongâ, subinflatâ, inæquilaterali, e natibus lineatis; valvulis crassis; natibus prominulis, ad apices minutè undulatâ; epidermide virido-olivaceâ, rugoso-striatâ; margaritâ argenteâ et iridescente.

Shell smooth, oblong, somewhat inflated, inequilateral, with a line from the beaks; valves thick; beaks somewhat prominent, at the tips minutely undulated; epidermis greenish-olive and roughly striate; nacre silvery and iridescent.

Hab. Carthagena, South America, John C. Trautwine, Esq.

My cabinet and cabinet of the Academy of Natural Science.

Diam. .9, Length 1.5, Breadth 2.5 inches.

Shell smooth, oblong, somewhat inflated, inequilateral, obtusely rounded before, subalate behind, with a line from the beaks to the posterior margin; substance of the shell thick; beaks somewhat prominent, submedial, at the beaks very minutely undulated; ligament very long and thin, not protruding above the dorsal line of the valves; epidermis greenish-olive, and roughly striate, quite imbricate behind, without rays; umbonial slope elevated into a carina; anterior cicatrices distinct; posterior cicatrices confluent; dorsal cicatrices none; palleal cicatrix slightly impressed; cavity of the shell rather deep and rounded; cavity of the beak very shallow and subangular; nacre silvery white, with minute striæ from the beaks towards the margin; iridescent.

Remarks.—The friends of Mr. Trautwine owe to him the possession of this interesting species, of which he brought many specimens, and liberally distributed them. It differs from any South American species which has come under my notice. It is a much smaller species than *An. trapezialis*, Lam., rougher in the epidermis and more oblong. Some of the specimens are somewhat greenish, others yellowish-olive. The triangular fosset at the end of the ligament, so usual in the South American *Naïades*, is very perceptible in this species.

In outline, it is allied to *tetragona*, (Nobis.)

Anodonta Wheatleyi. Pl. XXVI. Fig. 49.

Testâ lævi, transversâ, subinflatâ, gibbosâ, valdè inæquilaterali, posticè angulatâ, anticè irregulariter rotundatâ; valvulis crassis; natibus tumidis, parum elevatis, ferè terminalibus; epidermide cinnamomeâ, eradiatâ; margaritâ salmonis colore tinctâ et valdè iridescente.

Shell smooth, transverse, rather inflated, gibbous, very inequilateral, angular behind, irregularly rounded before; valves thick; beaks swollen, a little elevated and almost terminal; epidermis cinnamon-red and rayless; nacre salmon-coloured and very iridescent.

Hab. Para, South America, Mr. C. M. Wheatley.

My cabinet and cabinet of Mr. Wheatley.

Diam. .8, Length 1.1, Breadth 2.2 inches.

Shell smooth, transverse, rather inflated, gibbous, very inequilateral, angular behind, irregularly rounded before, slightly compressed near to the anterior margin and straight on the dorsal line; substance of the shell thick; beaks swollen, a little elevated and placed near to the anterior margin; ligament very long and very thin, scarcely protruding above the dorsal line; epidermis cinnamon-red, reddish-brown along the margin, totally without rays, the lines of growth approximate; posterior slope very long, rather wide, somewhat compressed, with a thin, coloured, elevated hair-like line passing from the beaks to the posterior margin; umbonial slope elevated and rounded; anterior cicatrices distinct, the smaller one very minute; posterior cicatrices confluent; no visible dorsal cicatrices; palleal cicatrices slightly impressed; cavity of shell rather shallow; cavity of the beaks rather shallow and subangular; nacre with minute striæ from the beaks towards the margin, of a beautiful light salmon colour, and magnificently iridescent.

Remarks.—Of this beautiful South American *Anodonta*, I have but a single specimen before me. It differs from any of the species described by Spix or D'Orbigny, and is altogether a very remarkable species. It is a stout shell, with a nacre which is softer, richer and more satin-like than in any I have ever seen. The nacre is a light salmon colour, with a tint of purple, which gives the most surprising softness and brilliancy to it. The margin is dark, but the nacre immediately in contact with it gives a line of fine blue and green. The triangular fosset at the end of the ligament, common to the South American species, is very marked in this.

I owe this and many other fine shells of this family to my friend Mr. Wheatley, and I dedicate this beautiful one to him.

Anodonta Shaefferiana. Pl. XXVI. Fig. 50.

Testâ lævi, oblongâ, inflatâ, inæquilaterali, posticè angulatâ; valvulis subcrassis; natibus prominentibus, ad apices undulatis; epidermide castaneâ, nitidâ, obsoletè radiatâ; margaritâ salmonis colore tinctâ.

Shell smooth, oblong, inflated, inequilateral, angular behind; valves rather thick; beaks somewhat prominent, undulated at the beaks; epidermis shining, chestnut-coloured and obsoletely rayed; nacre salmon coloured.

Hab. Horn Lake Creek, Tenn., Mr. Shaeffer.

My cabinet and cabinet of Mr. Shaeffer.

Diam. 1.2, Length 1.7, Breadth 2.8 inches.

Shell smooth, oblong, inflated, inequilateral, angular behind, rounded before; dorsal line under the beak, interrupted by a double, tuberculous callus; substance of the shell thick; beaks somewhat prominent, submedial, coarsely undulated at the tip; ligament rather short and thick; epidermis shining, chestnut coloured, obsoletely rayed, with distinct distant marks of growth; posterior slope broad and somewhat flattened; umbonial slope angular from beak to margin; anterior cicatrices confluent; posterior cicatrices confluent; dorsal cicatrices placed above the cavity of the beaks and partly on the tuberculate swellings; palleal cicatrix slightly impressed; cavity of the shell deep and broad; cavity of the beaks deep and subangular; nacre salmon-coloured and brilliant.

Remarks.—This species is nearly allied to *A. tetragona*, (Nobis,) but seems to me too distinct to be considered the same. The outline is much the same, but the tuberculous swellings under the beak are more enlarged than in that species. The umbonial angle is also more sharp. There are two specimens before me, both of which have beautiful salmon-coloured nacre. A third specimen, also from Mr. Shaeffer, marked "Missouri," is somewhat like the others, but approaches more to some of the varieties of *areolatus*, Swain.*

I owe this and several other fine shells to Mr. Shaeffer, an ardent collector of Cincinnati, and I name this one after him.

ANODONTA LINNÆNA. Pl. XXVII. Fig. 51.

Testâ lævi, rotundatâ, valdè inflatâ, subæquilaterali, posticè obtusè angulatâ; valvulis subtenuibus; natibus prominentibus, ad apices rugoso-undulatis; epidermide luteo-viridi, nitidâ, striatâ, obsoletè radiatâ; margaritâ salmonis colore tinctâ et iridescente.

Shell smooth, rotund, very much inflated, nearly equilateral, obtusely angular behind; valves rather thin; beaks prominent and rugosely undulate at the tip; epidermis yellowish-green, shining, striate, obscurely rayed; nacre salmon-coloured and iridescent.

Hab. Lake Concordia, Louisiana, Mr. C. M. Wheatley.

My cabinet and cabinet of Mr. Wheatley.

Diam. 1.9, Length 2.8, Breadth 4.1 inches.

Shell smooth, rotund, much inflated, nearly equilateral, obtusely angular behind; very much inflated and rounded at the umbones, curved on the dorsal line; substance of the shell rather thin; beaks prominent, inflated, and rugosely wrinkled at the tip; ligament rather short and somewhat thick; epidermis yellowish-green, shining, rather roughly striate, obscurely rayed and very dark on the posterior slope; posterior slope broad, short, rather flattened, and very rugose; umbonial slope angular; anterior cicatrices confluent; posterior cicatrices confluent; dorsal cicatrices placed near to the edge, some distance anterior to the point of the beaks; palleal cicatrix scarcely visible; cavity of the shell very deep and rounded; cavity of the beaks deep and rounded; nacre beautifully salmon-coloured, rich, and iridescent, leaving a very broad border round the margin.

Remarks.—This is the finest species of *Anodonta* I have seen from our country. It is most beautifully coloured in the nacre, which is exceedingly brilliant. A single specimen only is before me, and this is somewhat fractured. The margin is very uncommonly broad, without any pearly nacre, and white. The epidermis is rough with striæ, and yet it looks rich and pleasing. The green rays are broad and iridescent. This species is allied to *An. globosa*, (Nobis,) from Mexico; but it differs much in the smoothness and polish which the latter shell has. The beaks are more medial and the margin much broader. In colour they are entirely different. One is white, the other salmon-coloured. The fosset at the end of the ligament is remarkably large and curved.

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* When in Cincinnati, nearly two years since, Mr. J. Clarke gave me a suite of a species of *Anodonta* which he considers to be the true *edentula* of Mr. Say, described in "The Disseminator." They were taken from the river Ohio, near that city, and are not found in Mill Creek, near by, where the *areolatus* abounds. He says that they differ in the beaks, and in the outline they appear to me to differ very much,—the Ohio shell being very wide and oblong, while the Mill Creek shell is oval, and usually larger. The latter is also more rayed.

This beautiful species I dedicate to the memory of the great master in natural science, *Linnæus.*

Anodonta oblita. Pl. XXVIII. Fig. 52.

Testâ lævi, ellipticâ, compressâ, inæquilaterali, posticè subbiangulatâ; valvulis pertenuibus; natibus prominulis, ad apices undulatis; epidermide nitidâ, bruneo-viridi, obsoletè radiatâ; margaritâ cæruleâ albâ et iridescente.

Shell smooth, elliptical, compressed, inequilateral, subbiangular behind; valves very thin; beaks slightly prominent, undulated at the tip; epidermis shining, brownish-green, obscurely radiated; nacre bluish-white and iridescent.

Hab. Campbell county, East Tennessee, President Estabrook.
My cabinet and cabinet of President Estabrook.

Diam. .7, Length 1.2, Breadth 2 inches.

Shell smooth, elliptical, compressed, inequilateral, subbiangular behind, rounded before and slightly flattened on the anterior portion of the disk, with a simple curved dorsal line; substance of the shell very thin; beaks very small, slightly prominent and undulate at the tip; ligament rather thin and not very long; epidermis shining, brownish-green, obscurely rayed, with rather distant marks of growth; posterior slope rather narrow and somewhat compressed, with three distinct and somewhat distant green rays from the beaks to the posterior margin; umbonial slope rounded and considerably raised; anterior cicatrices confluent; posterior cicatrices confluent; dorsal cicatrices on the inside of the dorsal line; cavity of the shell very shallow; cavity of the beaks very shallow; nacre bluish-white and iridescent.

Remarks.—I received but three specimens from President Estabrook of this species. The largest, although small, seems to be adult. The green colour of the posterior portion of the valve is dark and fine. There are here three rather broad and unusually distinct rays, the inferior one being the largest, and well over the umbonial slope. The anterior portion of the disk is darker and brownish. This species is perhaps the nearest allied to *An. denigrata*, herein described. It may be distinguished by its being more compressed, greener and smaller.

Anodonta virens. Pl. XXVIII. Fig. 53.

Testâ lævi, ellipticâ, ventricossissimâ, inæquilaterali, posticè subangulatâ; valvulis tenuibus; natibus prominentibus, valdè tumidis, ad apices rugoso-undulatis; epidermide viridi, politâ, obsoletè radiatâ; margaritâ albâ et iridescente.

Shell smooth, elliptical, very much inflated, inequilateral, subangular behind; valves thin; beaks prominent, very much swollen and rugosely undulate at the tip; epidermis green, polished, obscurely radiated; nacre white and iridescent.

Hab. Red river, at Alexandria, Louisiana, J. Hale, M. D.
My cabinet and cabinet of Dr. Hale.

Diam. 1.9, Length 2.3, Breadth 3.5 inches.

Shell smooth, elliptical, very much inflated, inequilateral, subangular behind, angular at the anterior dorsal margin, very much inflated and somewhat gibbous on the umbones, nearly straight on the dorsal line; substance of the shell thin; beaks prominent, very much swollen and rugosely wrinkled at the tip; ligament rather short and somewhat thick; epidermis green, polished, slightly striate, obscurely rayed, with three rather obscure rays on the posterior slope, and with distant marks of growth; posterior slope very wide, rather short, and rather depressed; umbonial slope rounded, with an irregular, slightly raised line from the beaks to the posterior margin; anterior cicatrices confluent; posterior cicatrices confluent; dorsal cicatrices invisible; palleal cicatrix not observable; cavity of the shell very deep and rounded; cavity of the beaks deep and rounded; nacre white and iridescent.

Remarks.—Several specimens are before me, of different ages. It is perhaps most nearly allied to *An. Stewartiana*, (Nobis,) but is more rotund, more inflated and smoother on the epidermis. In some of its characteristics, it approaches the *An. Linnæana*, (Nobis,) described in this paper. It differs from that in being less rotund, in having a smoother and more polished epidermis, and it differs entirely in the nacre, which is not salmon-coloured, nor so thick or brilliant.

ANODONTA TORTILIS. Pl. XXVIII. Fig. 54.

Testâ plicatâ, obovatâ, subcompressâ, inæquilaterali, è natibus minutè lineatis; valvulis subtenuibus; natibus prominulis; epidermide olivaceâ, minutè tortile; margaritâ cæruleo-albâ et iridescente.

Shell plicate, obovate, somewhat compressed, inequilateral, minutely lined from the beaks; beaks a little prominent; valves rather thin; epidermis olive, minutely wreathed; nacre bluish-white and iridescent.

Hab. Carthagena, South America, J. C. Trautwine, Esq.
My cabinet.

Diam. .5, Length .9, Breadth 1.4 inches.

Shell plicate, obovate, somewhat compressed, inequilateral, rather obtusely rounded before and subalate behind, with a minute line from the beaks to the posterior margin; substance of the shell rather thin; beaks a little prominent, submedial; ligament rather long and thin; epidermis olive, minutely wreathed nearly over the whole disk, without rays; umbonial slope compressed and elevated into a carina; anterior cicatrices confluent; posterior cicatrices confluent; dorsal cicatrices none; cavity of the shell rather shallow; cavity of the beaks very shallow and subangular; nacre bluish-white, iridescent, with minute striæ from the beaks to the margin.

Remarks.—It is to be regretted that only a single specimen of this shell should have been found by Mr. Trautwine, to whose kindness I owe the possession of it. It is remarkable for the minute wreaths of the epidermis, which are distributed in festoons over most of the disk. In these wreaths it resembles the *An. crispata*, Lam., which is the only species of the family I have seen with this singular character. The specimen before me has the beaks beautifully tinged with a greenish hue, being epidermal matter deposited between the layers of nacreous matter. In the cavity of the beaks this shows quite conspicuously, and is stronger in two divergent lines. Under the lens, in this specimen, a number of minute impressions may be observed in both valves, posterior to the anterior cicatrix. Whether these are muscular attachments or not I am not certain; older and thicker specimens would enable one to judge. It has the triangular fosset common to the South American species. The margin is broad for the size of the shell, and the granules of it are very perceptible with a microscope of good power.

This species comes so near in its characters to the *An. crispata*, my specimen of which came from Cayenne, that it is with some hesitation that I have separated it. The *tortilis* has the festooned crimples much finer, and they do not extend over the whole disk, as in the *crispata*, nor are they by any means so much impressed, but change into striæ on the posterior slope and on the anterior portion of the disk. The *tortilis* is also rather longer and more compressed towards the beaks. On the *crispata* the festooned crimples are much coarser, and the marks of growth are different. Dr. Gould, in the Proceedings of the Boston Society of Natural History, November, 1850, described an *Anodonta*, under the name of *glauca*, brought by the Exploring Expedition, which I believed at the time to be the *crispata*, Lam. The specimen seemed to me to be of the same species with that which I procured from Ferussac, in Paris, under the name of *crispata*. The name of *glauca* also is preoccupied by Valencienes, for another *Anodonta* from South America. It is with some hesitation I place this in the division of "plicate" species, as it almost requires a lens to see the folds, but it cannot be called a "smooth" shell.

ANODONTA SCHRÖTERIANA. Pl. XXIX. Fig. 55.

Testâ lævi, transversâ, subcompressâ, valdè inæquilaterali, posticè obtuso-biangulari; valvulis subcrassis; natibus prominentibus, acutis; epidermide rugosâ, crebrissimè striatâ, tenebroso-olivâ, obsoletè radiâtâ; margaritâ albâ et iridescente.

Shell smooth, transverse, rather compressed, very inequilateral, obtusely angular behind; valves rather thick; beaks prominent and pointed; epidermis rough, thickly striated, dark-olive, indistinctly radiated; nacre white and iridescent.

Hab. Rio Negro, Brazil, Mr. C. M. Wheatley.
My cabinet and cabinet of Mr. Wheatley.

Diam. .9, Length 1.5, Breadth, 3.1 inches.

Shell smooth, transverse, rather compressed, very inequilateral, obtusely biangular behind, slightly compressed on the sides near the middle of the dorsal line, with a slight callus under the beaks; substance of the shell rather thick; beaks prominent, pointed and placed towards the anterior margin; ligament long and rather thin; epidermis very rough, covered with very close crimpled striæ, dark-olive, with a few indistinct rays over the posterior slope, and with rather distant lines of growth; posterior slope long, compressed into a carina; umbonial slope slightly raised and rounded; anterior cicatrices distinct, the smaller one very minute; posterior cicatrices confluent; no visible dorsal cicatrices; palleal cicatrices slightly impressed; cavity of the shell rather shallow and wide; cavity of the beaks shallow and angular; nacre with minute striæ from the beaks towards the margin, white and iridescent.

Remarks.—A single specimen, or rather the two valves of different individuals, was kindly given to me by Mr. Wheatley. It does not seem to have been noticed by Spix or by D'Orbigny. It is very peculiar in the texture of the epidermis, which is crimpled up into irregular, somewhat parallel, very close, rugose lines, which cover the whole surface of the disk. In both of these valves there is a distinct muscular impression above the great anterior cicatrix, which I have not observed before in any of the *Anodontæ*. The absence of a dorsal cicatrix is also unusual; but in this it resembles some of the other South American species, viz.: *Anodonta ensiformis*, Spix, *soleniformis*, D'Orb, &c. In outline it is nearly allied to *An. exilis*, (Nobis,) but it has not the straight dorsal line, is a thicker shell, and has a very different epidermis. The triangular fosset at the end of the ligament is rather large and well marked. The right valve has a few black pencilled marks in the nacre, such as are sometimes seen in the South American *Anodontæ*. These are remarkable as being nearly parallel, and in a direction pointing to the beaks. They look as if made by a pen, with black ink.

I name this fine species in honour of the memory of Schröster, author of Flusconchlien, &c.

ANODONTA ARKANSENSIS. Pl. XXIX. Fig. 56.

Testâ lævi, ellipticâ, compressâ, valdè inæquilaterali, posticè subbiangulatâ; valvulis crassis; natibus subprominentibus, ad apices undulatis; epidermide subviridi, radiatâ, striatâ; margaritâ cæruleo-albâ.

Shell smooth, elliptical, compressed, very inequilateral, subbiangular behind; valves thick; beaks rather prominent and undulated at the tip; epidermis greenish, rayed; nacre bluish-white.

Hab. Little Arkansas, J. L. Le Conte, M. D.
Cabinet of Major Le Conte.

Diam. .9, Length 1.7, Breadth 3 inches.

Shell smooth, elliptical, compressed, subbiangular behind and rounded before, subangular on the posterior slope; substance of the shell thick; beaks rather prominent, pointed, with three or four large undulations at the tip; ligament long and rather thin; epidermis greenish, striate, with unequal transverse marks of growth, dark on the posterior slope, with indistinct, broad greenish rays over the disk; posterior slope with two lines from the beak to the posterior margin; dorsal margin slightly curved, and having a callus immediately under the beak almost amounting to a tooth; anterior cicatrices distinct; posterior cicatrices confluent; dorsal cicatrices placed on the lower part of the callus; cavity of the shell rather shallow; cavity of the beaks shallow and angular; nacre bluish-white, leaving a broad dark margin.

Remarks.—A single specimen of this interesting species has been submitted to me by Dr. J. L. Le Conte, who obtained it on a late scientific excursion to the Rocky Mountains, from the Little Arkansas, where the road to Santa Fé crosses it. This species is not likely to be confounded with any other known to me, and belongs to that group which has an irregular thickening or callus under the beak on the dorsal margin, which, while it does not amount to a tooth, makes a very distinct natural group. This callus is not so large and marked as to be confounded with D'Orbigny's genus *Monocondylæa;* but it may be compared with that of *Alasmodonta edentula*, Say, which is a true *Anodonta*. The form of this species is more lenticular than in any other of the genus I know; and looking on the exterior reminds us of *Symphynota compressa*, (Nobis,) changed to *U. pressus*, (Nobis.) The undulations of the beaks are large, and the epidermis of them being thin, gives the tip a whitish appearance.

DESCRIPTION OF A NEW GENUS (BASISTOMA,) OF THE FAMILY MELANIANA,

TOGETHER WITH

SOME NEW SPECIES OF AMERICAN MELANIÆ.

FAMILY MELANIANA.

GENUS BASISTOMA.*

Testa conica. Apertura ovata, basi abscissa. Labrum acutum. Columella lævi. Operculum ——.

The particular shell for which I propose this genus was given to me by Amory Edwards, Esq., late the Consul of the United States at Rio, who brought it from four hundred miles up the river Tocatinus, five hundred miles distant from the ocean, at the mouth of the Amazon. It differs from any of the family of *Melaniana* in the cut at the base, and it has none at the superior part of the aperture. It comes near to *Pirena*, but wants the superior cut, and it differs from *Melanopsis* in its general form as well as in having no callus on the columella. The *Melaniana* being so enormously developed, and having but few genera, I think it advisable to constitute new ones, whenever a group can be well characterized, which is the case with this form. I think that *Melania transversa*, (Nobis,) from Guiana, and *M. Braziliensis*, (Nobis,) would properly come under this division, and very likely other characteristic species will be found in that portion of South America whence these three come. The genus *Melatoma*, Swainson, is a well characterized group in some respects near to this. While it is emarginate at base, it has an emargination also towards the upper portion of the outer lip, and the group, as far as I know it, has a general and well characterized outline, being somewhat mitraform. I think that my *M. microstoma*, *tornatella* and *rudis* all belong to a group which would constitute a new genus, unless it could be put into one of Mr. Swainson's genera, all the types of which I have not seen.

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* βασις, base, and τεμνω, to cut.

When I proposed the name of *Schizostoma* for a genus of *Melaniana* with a cut at the superior portion of the aperture, I was not aware that M. Bronn had already used that name for a fossil genus. I now propose to substitute *Schizochilus*, from σχιζω, *to cut*, and χεiλος, *lip*.

I very much regret that the operculum did not accompany this specimen, suspecting, as I do, that it will be found to differ from the genus *Melania*, and be somewhat like *M. transversa*, which I propose above to bring into this group. The operculum of this latter species was described by me as having the polar point near the centre, and having five revolutions.*

Basistoma Edwardsii. Pl. XXX. Fig. 1.

Testâ striatâ, turritâ, subcrassâ, geniculatâ, tenebroso-corneâ; spirâ valdè attenuatâ; suturis valdè impressis; anfractibus planulatis; supernè impressis, lineis crebrissimis instructis; aperturâ subgrandi, ellipticâ, intus albidâ, ad basim valdè abscissâ; columellâ lævi tortâque.

Shell striate, turreted, rather thick, geniculate, dark horn-colour; spire very much drawn out; sutures very much impressed; whorls flattened, impressed above, thickly covered with revolving lines; aperture rather large, elliptical, white within, at the base abruptly cut off; columella smooth and twisted.

Hab. River Tocatinus, South America, Amory Edwards, Esq.
My cabinet.

Diam. .50, Length 1.92, of an inch.

Remarks.—This very beautiful and interesting shell is remarkable for the new form it presents in the aperture. It is thickly striate all over the whorls, and looks like a succession of coils of rope piled on each other. The two lower whorls are impressed above the middle, which gives it a geniculate character immediately below the suture. Between the striæ there are very minute sculptured points. The apex being eroded, the number of whorls are not ascertainable, but they are probably about ten. The outer lip is very sharply edged, and the central portion very much extended on a curve. The aperture is about one-fourth the length of the shell.

The form of this species reminds one of *Achatina columna* (*Lymnea columnaris*, Lamarck,) which is however, a land shell. It is drawn out like it and has flattened sides, with a cut at the base of nearly the same form. In other characters they are not at all alike, the *columna* being sinistral, covered with granules, much larger and belonging to a different genus altogether.

I dedicate this fine species to my friend Mr. Edwards, to whom I am indebted for it and many other interesting shells from the waters and banks of the Amazon.

Melania perstriata. Pl. XXX. Fig. 2.

Testâ striatâ, acuto-conoideâ, subtenui, cinnamomeo-bruneâ; spirâ elevatâ, subattenuatâ, ad apicè carinatâ et granulatâ; suturis impressis; anfractibus septenis, convexis; aperturâ parvâ, ellipticâ, ad basim angulatâ, intus rufâ; columellâ lævi.

Shell striate, acutely conical, rather thin, cinnamon-brown; spire elevated, somewhat attenuate, at the apex carinate and granulate; sutures impressed, whorls seven, convex; aperture small, elliptical, angular at the base, reddish within; columella smooth.

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* Proceedings Zoological Soc., London, 1851, p. 187.

Hab. Coosa river, Alabama, Prof. Brumby. Huntsville, Tenn., Mr. J. Clark. Tennessee, Prof. Troost.

My cabinet and cabinets of Prof. Brumby and Mr. Clarke.

Diam. .28, Length .83, of an inch.

Remarks.—Among the numerous *Melaniæ* sent to me long since by my late friend Prof. Troost, were several specimens of the young of this species. I could not satisfactorily place them in any known species, and I put them temporarily with *striatula*, (Nobis,) which is strongly allied to the species which I have described above. Recently, I have received from Prof. Brumby and from Mr. J. Clark several adult specimens, which leave the younger in my possession no longer in doubt,—they were recognised at once to belong to those more recently received. All the specimens—some dozen—before me are reddish; the *striatula* is horn-coloured, with a white aperture. The latter is also flatter in the whorls, and not so carinate above, nor are the sutures so deeply impressed. Some of the specimens are quite smooth on the body whorl. Aperture about one-third the length of the shell.

MELANIA SCULPTILIS. Pl. XXX. Fig. 3.

Testâ perstriatâ, conoideâ, subtenui, corneâ; spirâ acuminatâ, ad apicem carinatâ et granulatâ; suturis irregulariter impressis; anfractibus decim, subplanulatis; striis crebris et inter sculpturatâ; aperturâ parvâ, ellipticâ, ad basim angulatâ, intus albidâ; columellâ incurvâ tortâque.

Shell thickly striate, conical, rather thin, horn colour; spire pointed, towards the apex carinate and granulate; sutures irregularly impressed; whorls ten, rather flattened; striæ close, and between them sculptured; aperture small, elliptical, angular at base, white within; columella incurved and twisted.

Hab. Tennessee, Mr. J. Clark.

My cabinet and cabinet of Mr. Clark.

Diam. .24, Length .55, of an inch.

Remarks.—Two specimens are before me, which are precisely alike. It is a very remarkable species, having regular and close striæ over the whole of the lower whorls, between which striæ there is a double row of minute indented marks, very close to each other, and only visible with a lens. I have seen no such marks on any other species. In outline it is closely allied to *striatula*, (Nobis,) but it is a smaller species, and has not the cancellation of that species. The aperture is rather more than one-third the length of the shell. The outer lip is broken.

MELANIA CLARKII. Pl. XXX. Fig. 4.

Testâ plicatâ, claviformis, subtenui, tenebroso-fuscâ; spirâ elevatâ, attenuatâ; suturis subimpressis; anfractibus planulatis; aperturâ parvâ, subellipticâ, ad basim angulatâ, intus tenebrosâ; columellâ tortâ.

Shell folded, club-shaped, rather thin, dark-brown; spire elevated, drawn out; sutures somewhat impressed; whorls flattened; aperture small, rather elliptical, at the base angular, within dark; columella twisted.

Hab. Duck Creek, Tenn., Mr. Joseph Clark.

My cabinet and cabinet of Mr. Clark.

Diam. .23, Length .73, of an inch.

Remarks.—The form of this species is more attenuate than usual with the clavate forms. It has about ten whorls; those above the body whorl being disposed to be both plicate and striate. Towards the apex they are all thickly striate. On all the specimens before me, on the lower whorls, there are irregular oblique striæ, somewhat similar to those on the *M. Ocoeënsis*, (Nobis,) which give them a malleate character. On the upper margin of the whorls, along the sutures, there is usually an indistinct light line. The outer lip is broken.

Melania Brumbyi. Pl. XXX. Fig. 5.

Testâ striatâ, pyramidatâ, subcrassâ, rufo-bruneâ; spirâ valdè elevatâ, ad apicè carinatâ; suturis vix impressis; anfractibus planulatis; aperturâ subgrandi, rhomboideâ, intus rubiginosâ; columellâ tortâ.

Shell striate, pyramidal, rather thick, reddish-brown; spire very much elevated, carinate at the apex; sutures but slightly impressed; whorls flattened; aperture rather large, rhomboidal, within rubiginose; columella twisted.

Hab. Coosa river, Alabama, Prof. Brumby. Huntsville, Alabama, Mr. J. Clark.
My cabinet and cabinets of Prof. Brumby and Mr. Clark.
Diam. .53, Length 1.72, of an inch.

Remarks.—This is a very remarkable species, and among the largest of our *Melaniæ*. In form and size it is allied to *annulifera*, Con., but may easily be distinguished by its more numerous striæ, its reddish colour, and the form of its aperture, which is more open. In the *Brumbyi* there is an angle in the middle of the whorl, which gives the aperture a rhomboidal form. The columella is rufous and the channel whitish. The apex of each of them being broken, the number of whorls cannot be correctly ascertained. I should suppose there were at least ten. Some of the specimens here are beautifully granulate between the striæ. The aperture is not quite one-fourth the length of the shell. Along the suture, on the upper part of the whorl, there is a line of a lighter colour than the other part.

I dedicate this species to Prof. R. T. Brumby, who has done so much in bringing to light the interesting shells of Alabama.

Melania oblita. Pl. XXX. Fig. 6.

Testâ valdè carinatâ, turritâ, cochleæformis, subtenui, corneâ; spirâ attenuatâ; suturis linearibus; anfractibus duodecim, acutè carinatâ; aperturâ parvâ, ellipticâ, intus albidâ; columellâ albâ tortâque.

Shell very much carinated, turreted, screw-shaped, rather thin, horn-coloured; spire drawn out; sutures linear; whorls twelve, acutely carinate; aperture small, elliptical, within whitish; columella white and twisted.

Hab. Tennessee?
My cabinet.
Diam. .30, Length .96, of an inch.

Remarks.—I have about a dozen of this species, which is very distinct from any with which I am acquainted. The locality I am uncertain about, the label being by some accident lost. I believe it comes from Tennessee, but am not certain. Its very marked character of a screw, or rather the end of a gimlet, strikes one at once. In most species there is a thread-like line above the carina and several below. The carina is not usually persistent on the body whorl. It is nearest in form and size to *M. percarinata*, Con., but may be easily distinguished by the absence of granules between the carinæ, the length of the spire, having three or four more whorls, and in being less shining. The aperture is not quite one-third the length of the shell.

MELANIA FURVA. Pl. XXX. Fig. 7.

Testâ lævi, conoideâ, subcrassâ furvâ; spirâ subelevatâ; suturis excavatis; anfractibus planulatis; aperturâ parvâ, subrhomboideâ, ad basim angulatâ, intus purpureâ; columellâ purpureâ tortâque.

Shell smooth, conical, rather thick, dusky; spire rather elevated; sutures furrowed; whorls flattened; aperture small, subrhomboidal, at the base angular, within purplish; columella purple and twisted.

Hab. Branch of Coosa River, Alabama, Prof. Brumby.
My cabinet and cabinet of Prof. Brumby.

Diam. .30, Length .84, of an inch.

Remarks.—A single specimen of this species was received from Prof. Brumby. It has the apex so much eroded as to present only a little more than three whorls, which are, however, perfect, and enable me to distinguish it from its allied species, the nearest of which is *M. arata*, (Nobis.) The sutures have the same furrowed line, and the sides of the whorl are alike flattened. The aperture, however, differs in form and colour. In the *arata* the columella is straight down to the channel at the base; in the *furva*, it is curved to the right and the channel is less marked. The length of the aperture, in perfect specimens, must be about one-third the length of the shell.

The *Alexandrensis*, (Nobis,) from Louisiana, is very closely allied to this species, and when perfect specimens of both shall be obtained, they may possibly be found to be the same.

MELANIA SELLERSIANA. Pl. XXX. Fig. 8.

Testâ plicatâ, parvâ, conoideâ, subcrassâ, bruneo-nigricente; spirâ subbrevi; suturis linearibus; anfractibus subconvexis; aperturâ magnâ, ellipticâ, ad basim rotundatâ, intus purpureâ; columellâ valdè incurvatâ.

Shell folded, small, conical, rather thick, very dark-brown; spire rather short; sutures linear; whorls slightly convex; aperture large, elliptical, rounded at the base, within purple; columella very much incurved.

Hab. Cany Fork, Tennessee, Mr. Coleman Sellers.
My cabinet and cabinets of Mr. Sellers and Mr. Anthony.

Diam. .16, Length .38, of an inch.

Remarks.—This is an interesting little species, somewhat like *M. Nickliniana*, (Nobis,) in its general appearance and size, but is less inflated, and of a darker colour. It might be supposed that its being a plicate shell would at once distinguish it; but the *Sellersiana* seems to be very variable in the character of its folds, some of the specimens really having none remaining. These may have had folds near the apex, which is now eroded. Some of those before me are beautifully folded down to the last half of the body whorl, the folds being rather large and straight. The surface varies very much; some of the specimens being beautifully mallcate, while on others no such marks can be observed. The outer lip is broken.

The apex being eroded in all the specimens, I am not sure of the number of the whorls; there may be about six. The aperture is about one-half the length of the shell.

I dedicate this species to Mr. Coleman Sellers, of Cincinnati.

MELANIA OPPUGNATA. Pl. XXX. Fig. 9.

Testâ lævi, truncatâ, cylindraceâ, percrassâ, luteo-corneâ; spirâ truncatâ; suturis magnis et valdè irregulariter impressis; anfractibus valdè compressis, supernè geniculatis; aperturâ prælongâ, valdè constrictâ, supernè callosâ, intus albâ; columellâ tortâ, supernè valdè incrassatâ.

Shell smooth, truncate, cylindrical, very thick, yellowish horn-colour; spire cut off; sutures large and very irregularly impressed; whorls very much compressed, geniculate above; aperture very long, very much narrowed, above callous, within white; columella twisted, and very much thickened above.

Hab. Alabama river, Mr. C. M. Wheatley.
My cabinet and cabinet of Mr. Wheatley.

Diam. .41, Length —— ?

Remarks.—This is a very remarkable species. The two specimens before me are both cut off, leaving little more than the body whorl. When taken they were evidently living and healthy specimens, but the eroded and fractured spires give them the appearance of old and diseased shells, which is by no means the case. The upper part of the whorl, along the suture, is irregularly fractured round the whole circle. This arises from the fact that the animal having filled up the channel with calcareous deposit, suddenly recommences at a new line of growth, some distance below, leaving open and bare of epidermal matter this upper portion of the channel, which consequently having a sharp edge, becomes more or less fractured. The whorls are so much flattened that the two sides are nearly parallel. One of the specimens has a small spot of brown in the aperture above and below—the other has none. This species is allied to *auriculaformis*, (Nobis,) on one side, and *olivula*, Con., on the other, but it may be easily distinguished from both of them. The former is a smaller shell and more fusiform; the latter is more conical, less thickened on the columella, and not irregularly fractured in the suture. The number of whorls or proportional size of the aperture cannot be ascertained on the specimens before me. They have the appearance of having been very much exposed to an attacking enemy, hence the name.

MELANIA SAFFORDII. Pl. XXX. Fig. 10.

Testâ lævi, obtuso-conoideâ, crassâ, subfusiformis, tenebroso-viridi; spirâ subbrevi; suturis linearibus; anfractibus convexiusculus, ultimo magno; aperturâ subgrandi, ovato-productâ, intus purpureâ; columellâ purpureâ tortâque.

Shell smooth, obtusely conical, thick, subfusiform, dark-green; spire rather short; sutures linear; whorls a little convex, the last large; aperture rather large, ovately elongated, within purple; columella purple and twisted.

Hab. Lebanon, Wilson county, Tennessee, Mr. James M. Safford.
My cabinet and cabinet of Mr. Safford.

Diam. .37 Length .85, of an inch.

Remarks.—This is a very distinct species, with a not uncommon form. The green colour is unusual. On the upper part of the whorl, and on the line of the suture there is a light or brownish band. The body whorl is rather suddenly enlarged in the middle, which gives it a slight gibbous appearance, and it is irregularly transversely striate. The apex of each of the three specimens under my examination being eroded, the number of whorls cannot be exactly ascertained, but I think there must be about six. The aperture is quite one-half the length of the shell. It is allied to *M. sordida*, (Nobis,) in outline, but may easily be distinguished in colour and the gibbous swelling on the whorls. I name this after Mr. Safford, to whose kindness I owe this and some other fine specimens from Tennessee.

Melania pinguis. Pl. XXX. Fig. 11.

Testâ lævi, inflatâ, subrotundâ, percrassâ, tenebroso-fuscâ; spirâ obtuso-conoideâ; suturis impressis; anfractibus convexiusculus; aperturâ magnâ, rotundatâ, intus vel albâ vel purpureâ; columellâ incurvâ, incrassatâ.

Shell smooth, inflated, almost round, very thick, dark-brown; spire very obtusely conical; sutures impressed; whorls a little convex; aperture very large and rounded, within either white or purple; columella incurved and thickened.

Hab. Lebanon, Wilson county, Tenn., Mr. J. M. Safford.
My cabinet and cabinet of Mr. Safford.

Diam. .34, Length .53 of an inch.

Remarks.—I have three specimens before me from Mr. Safford; two of them are purple within and one white. None of them are perfect on the apex, but I presume that the number of whorls must be five. One of the specimens has four. In outline it is very much like *M. inflata*, (Nobis,) but it differs totally in the form of the columella. In that species the columella is twisted backwards, and makes an angular oblique channel—in the *pinguis* it is regularly curved, with scarcely a perceptible indentation in the place of a channel. The aperture is fully one-half the length of the shell.

Melania gibbosa. Pl. XXX. Fig. 12.

Testâ lævi, parvâ, obtuso-conoideâ, gibbosâ, subfusiformi, subtenui, virido-corneâ; spirâ obtusâ; suturis irregulariter impressis; anfractibus quinque, subconvexâ; aperturâ magnâ, ellipticâ, intus bivittatâ; columellâ rubiginosâ, incrassatâ, planulatâ, impressâ et valdè curvatâ.

Shell smooth, small, obtusely conical, gibbous, subfusiform, rather thin, greenish horn-colour; spire obtuse, sutures irregularly impressed; whorls five, somewhat convex; aperture large, elliptical, within double banded; columella rubiginose, thickened, flattened, impressed and much curved.

Hab. Scioto river, Ohio, Mr. C. M. Wheatley.
My cabinet and cabinet of Mr. Wheatley.

Diam. .25, Length .43, of an inch.

Remarks.—This is a small, very remarkable species. There is a slight depression above the middle of the whorl, which gives it a somewhat gibbous form. The most unusual character pertaining to this species is, however, the very flat and impressed columella, more impressed at the point of the umbilical region. The columella on the upper part of these two specimens is not thickened, but it is of a dark-brown colour, and being also dark below, the colour extends to the outer side of the whorl, and there makes two rather indistinct bands. In outline it is allied to *M. fusiformis*, (Nobis,) but they differ entirely in the columella and in the length of the aperture. The aperture is rather more than one-half the length of the shell.

I have had some doubts of the Scioto being the real habitat of this shell; but Mr. Wheatley says it was sent from thence to him. It seems to have a more southern aspect.

DESCRIPTION OF A NEW SPECIES OF HELIX,

FROM CALIFORNIA,

AND A NEW CHARACTERISTIC FORM OF CERTAIN AMERICAN COLIMACEÆ.

Helix Lecontii. Pl. XXX. Fig. 13.

Testâ plano-convexâ, infernè convexâ, papillosâ, bruneo-corneâ, latè umbilicatâ, tridentatâ, intus columnâ accessione instructâ; anfractibus senis; aperturâ subrotundatâ, constrictâ; labro hipatico, reflexo, bidentato; columellâ uno-dentatâ.

Shell plano-convex, convex below, papillose, brownish horn-colour, widely umbilicated, three toothed, furnished with an accessory column within; whorls six; aperture rounded, constricted; outer lip dull-brown, reflexed, two-toothed; columella one-toothed.

Hab. St. Francisco, J. L. Le Conte, M. D.
My cabinet and cabinet of Dr. Le Conte.

Diam. .27, Length .15, of an inch.

Remarks.—This is a very beautiful little species, which is allied in some of its characters to *hirsuta*, Say, *inflecta*, Say, and *Leai*, Ward. It is about the size, outline and colour of the last, and the umbilicus is of the same size. It differs, however, in the teeth, the *Leai* having none on the outer lip; and in the papillæ, which are smaller, rounder and closer in the *Leai*. The tooth on the columella is alike in both, being long, white, and incurved. Like the *inflecta*, it has two teeth on the outer lip, but these are much larger and whiter in the *inflecta*, which differs also in having the umbilicus closed, and in the papillæ being less distinct. In colour it is like a brown *hirsuta*, but it differs in being smaller, in being umbilicate, and in having two teeth on the outer lip, instead of a sinus, as in *hirsuta*, which has a much larger tooth on the columella, and a much more constricted aperture.

Fig. 13, b represents the papillæ enlarged.

Neither of the few specimens brought by Dr. Le Conte has the animal alive, which, of course, will remain yet to be described. The papillæ cover the whole surface. On the upper portion of the whorls they are close and elongate, passing into the form of striæ. On the lower portion they are more rounded and beautifully displayed. It is very probable that in some very perfect specimens, they may be found to have a hirsute character.

I dedicate this species to Dr. Le Conte, whose enterprising researches in California have brought to our knowledge many new forms in other branches of natural history.

Accessory Column in the Family Colimacea.

When recently examining very closely the structure of some of our *Helices*, I observed what had before escaped my attention, a pillar or an additional column, placed like a fulcrum (buttress) in the interior, against the wall of the ordinary column, at the distance of a fifth to a third of a revolution of the whorl from the aperture. I first observed it on the *Carocolla spinosa*, (Nobis,) and followed up this discovery until I detected it in a number of species and three different genera, admitting *Carocolla*, of Lamarck, and *Polygyra*, of Say, to be distinct genera, which I think it better at present to recognise.

This fulcrum, as I propose to call it, in distinction from the central column, varies in form, in size and in place in different species; and at a future period I may give a more exact account and a fuller description than I am enabled at present to take the time to do. It is generally visible from the exterior by the naked eye, when the specimen is thin and in a perfect state. With the assistance of a lens it may be easily seen, though not perfectly examined and defined. For this purpose it is necessary to fracture the portion of the shell in the vicinity of the *fulcrum*. It will be found in some species to be a simple round column soldered to the paries of the main column; in others, a compressed or flattened column, extending into the cavity of the whorl.

The purpose of this *fulcrum* or buttress is very evidently instituted for the greater strength of the ultimate whorl, which being very much enlarged, seems, in some of these more delicate species to require additional support.

I have detected the fulcrum in the following species, and as several of the species of Dr. Binney and Dr. Gould are unknown to me, I think it likely to be found in some of them.

Carocolla spinosa, Lea.
" Edgariana, Lea.
Helix hirsuta, Say.
" monodon, Racket.
" Leai, Ward.
Helix leporina, Gould.
" Lecontii, Lea.
Polygyra Troostiana, Lea.
" Dorfuilliana, Lea.

It is due to my friend Dr. Leidy to say, that, when I informed him, some months since, of my having observed this *fulcrum* in many of the *Helices*, that he at once informed me that while engaged on the anatomical portion of Dr. Binney's work, which he accomplished for that zoologist, he had observed in the *Helix hirsuta* this character of the shell, and advised Dr. Binney of it at the time. But it seems that he did not take advantage of Dr. Leidy's information, or he may not have himself detected, on examination, this important additional character to these species.

While I have the *Polygyra Troostiana* and *P. Dorfeuilliana* before me, I will take the opportunity to express my dissent to these species being placed by Dr. Binney and Dr. Gould, as synonymous with *Helix fatigiata*, Say. They are not only entirely distinct from *fatigiata*, but are distinct in themselves, and I am sure that zoologists who may procure good specimens of both, will, on a critical examination, declare them to be different from each other and distinct from *fatigiata*.

In the very learned and elaborate work of the late Dr. Binney, "Terrestrial Air-Breathing Mollusks of the United States," he takes occasion to state his strong disapprobation of the use of personal names for species in natural history, and at the same time points out a case where he considered it had been carried, to an abuse by a naturalist of this city. I wish simply, in answer, to give an opinion on the subject, first premising, that Dr. Binney had himself, in at least two instances, applied personal names to his own species, few of which he made, committing a graver error than those who do not disapprove of the use of personal names.

There are several reasons, in my opinion, why they may be used:

1st. Most of the great naturalists, for nearly one hundred years, have used them without hesitation; and the most distinguished of modern writers have sanctioned the example by following it; as Lamarck, in *Helix Bonplandii*, &c.; Ferussac, in *Helix Richardii*, &c., as well also other eminent writers in various branches of natural history.

2d. It is a good substitute, where a well recognised descriptive name cannot be applied, which is often the case.

3d. It is an honourable acknowledgment of services performed by co-labourers in the field of science, and it is a gratification due to ardent collectors, who labour for the man of science at a distance, and often in parts of the world subject to disease and other dangers.

Some very distinguished naturalists have gone much beyond the simple use of proper names for species, for they have applied them even to genera. For instance, Lesueur's genus *Macluria;* Tremenville's genus *Rissoa;* D'Orbigny's genus *Acostæa*, &c. &c.

In botany, personal names thus applied to *genera* have been most extensively used. In zoology I do not consider this necessary or desirable, but I do think there is not only a convenience in using such names for species, but sometimes almost an imperative necessity for it. In very extensive genera, where many hundred species abound, as in the genera *Unio*, *Melania*, *Conus*, &c., &c., it would be impossible to obtain descriptive names for all.

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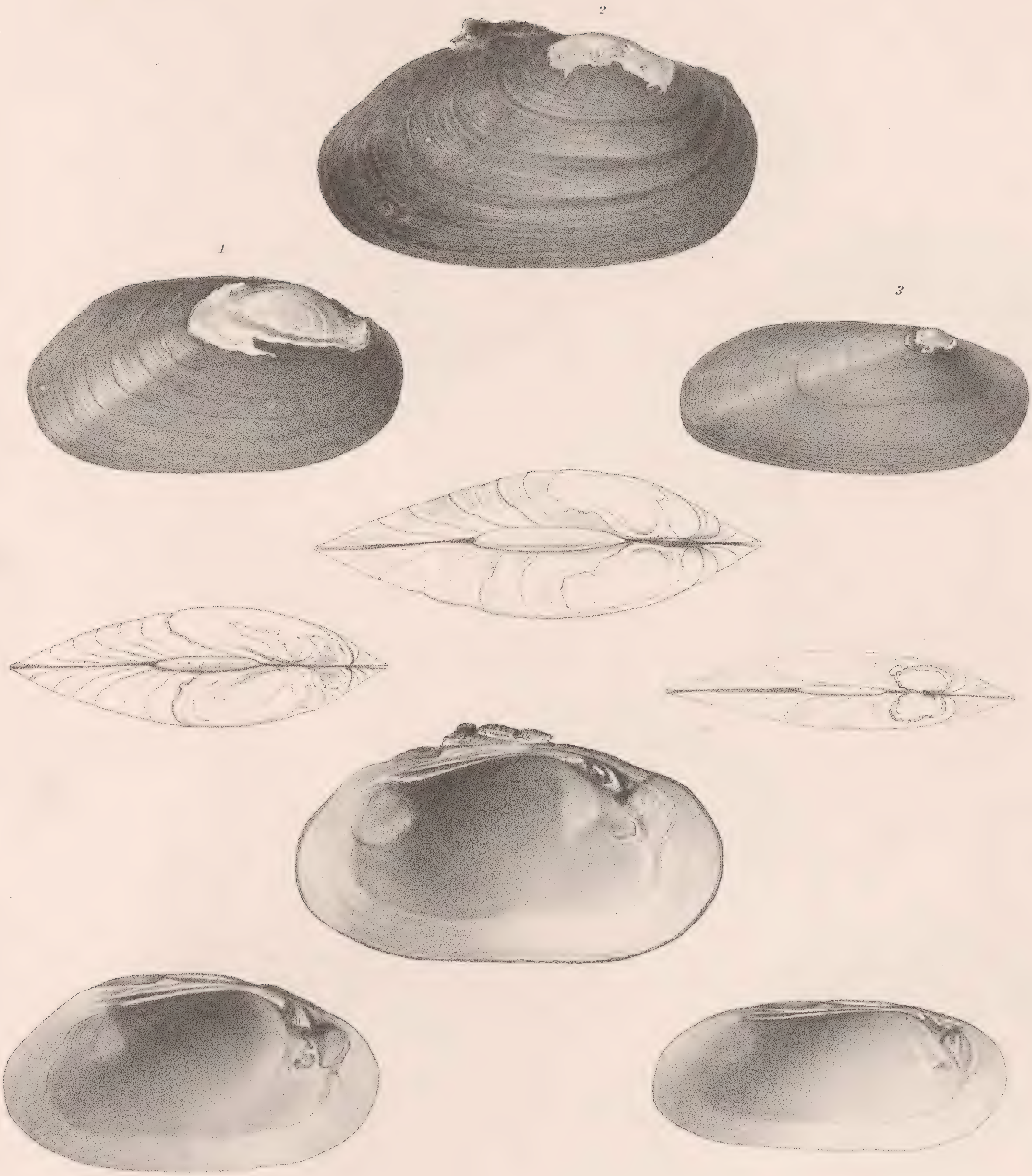

1 *Unio* ***sordidus***
2 „ *Gibbesianus*
3 „ *perstriatus*

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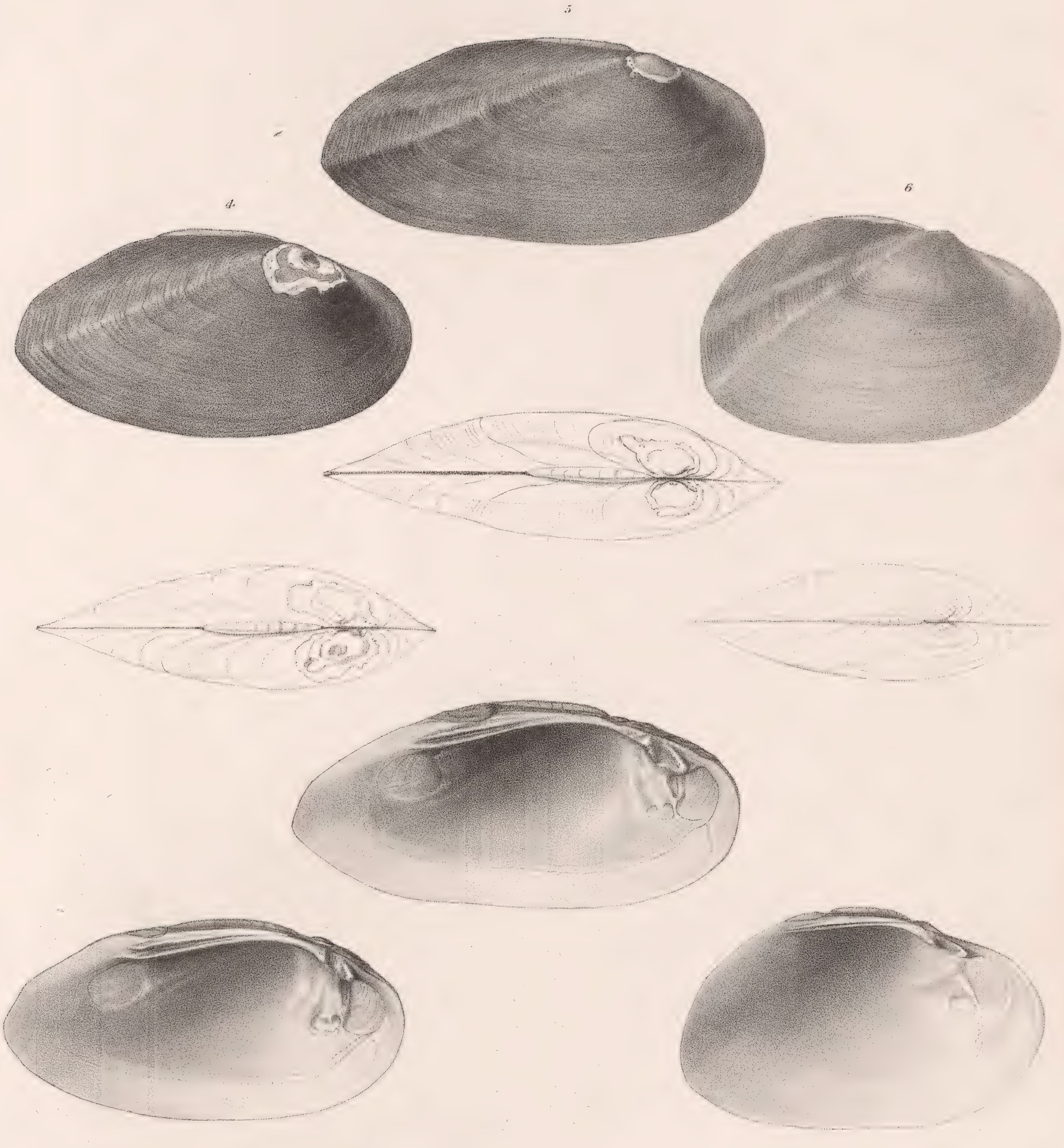

4 *Unio Tuomeyi.*
5 „ *Barrattii.*
6 „ *decoratus.*

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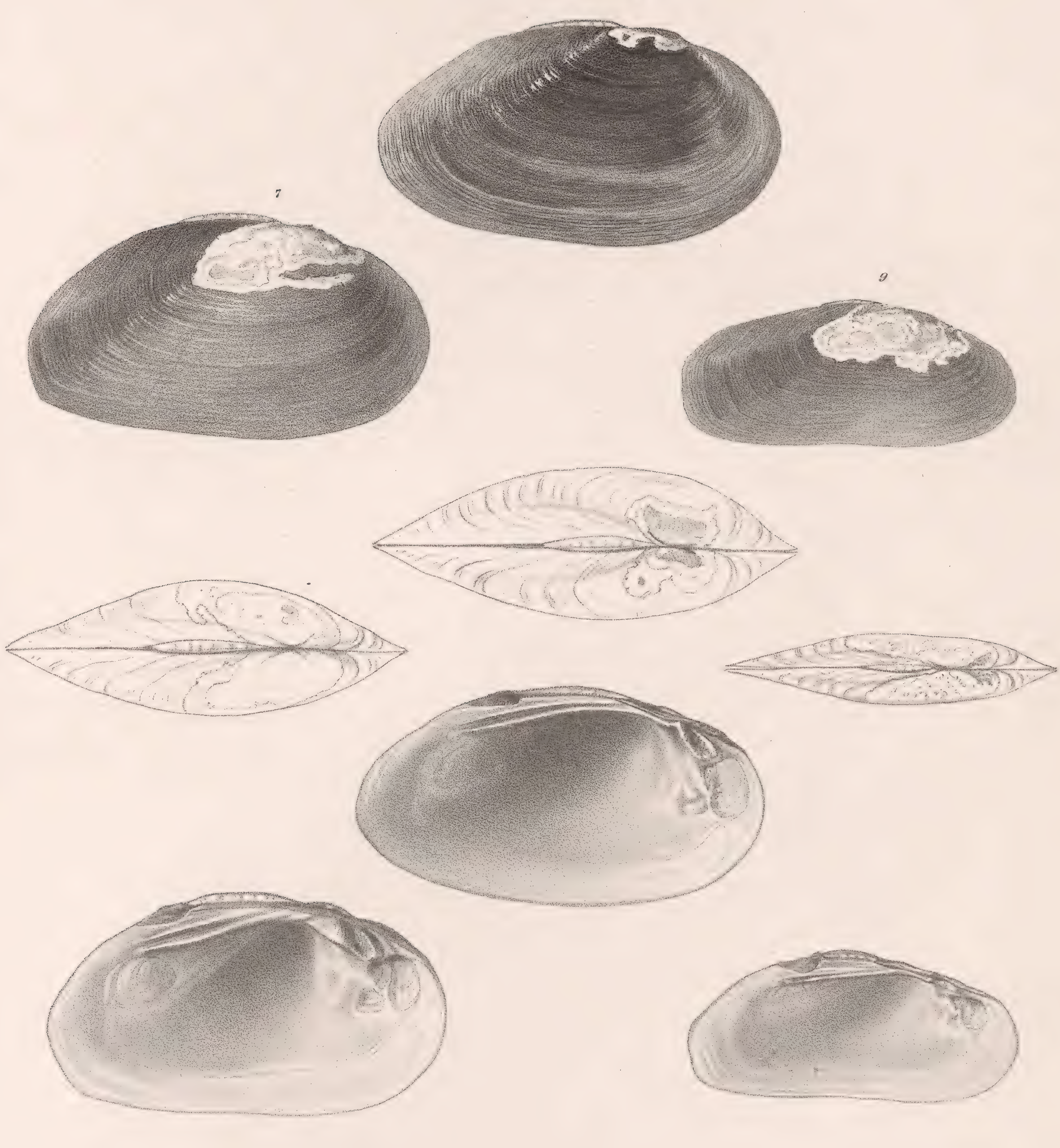

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7, Unio rufusculus.
8, " Whiteianus.
9, " Lazarus.

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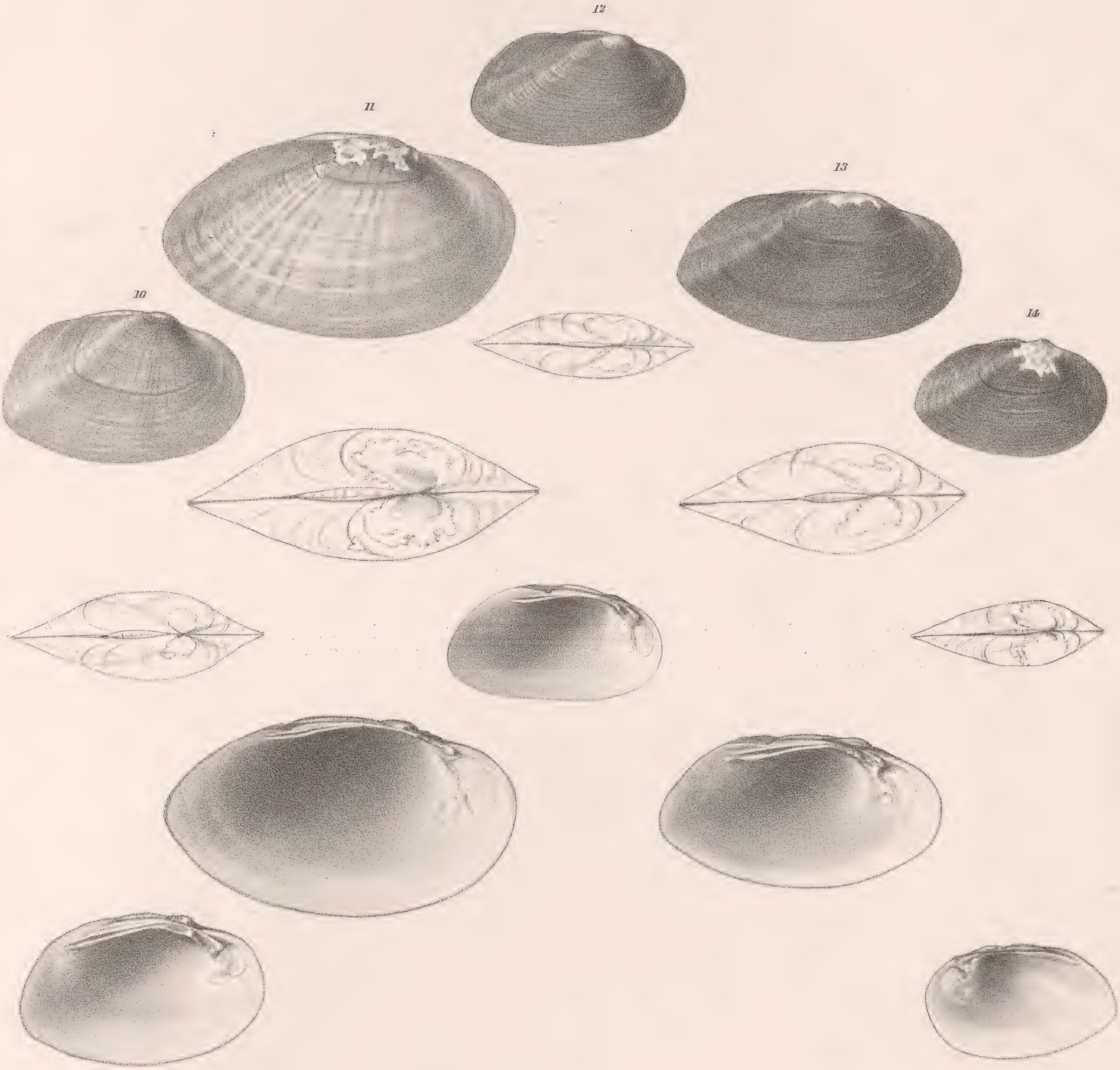

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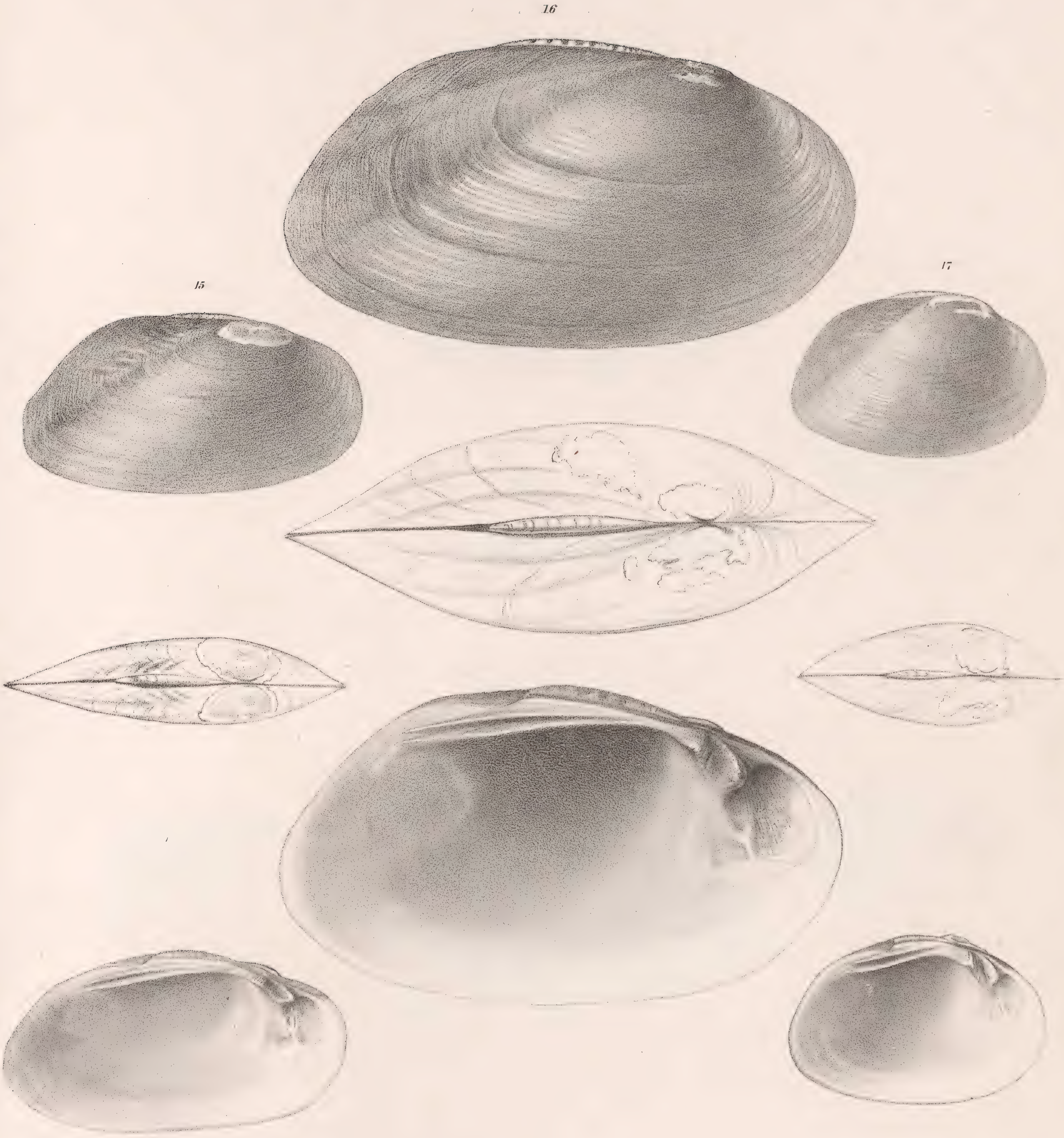
10, Unio *merus*.
11, „ *concavus*.
12, „ *inceptus*.
13, „ *buxeus*.
14, „ *pygmæus*.



15 Unio fraternus.
16 " Cavierianus.
17 " Forbesianus.

n Nature by [illegible]

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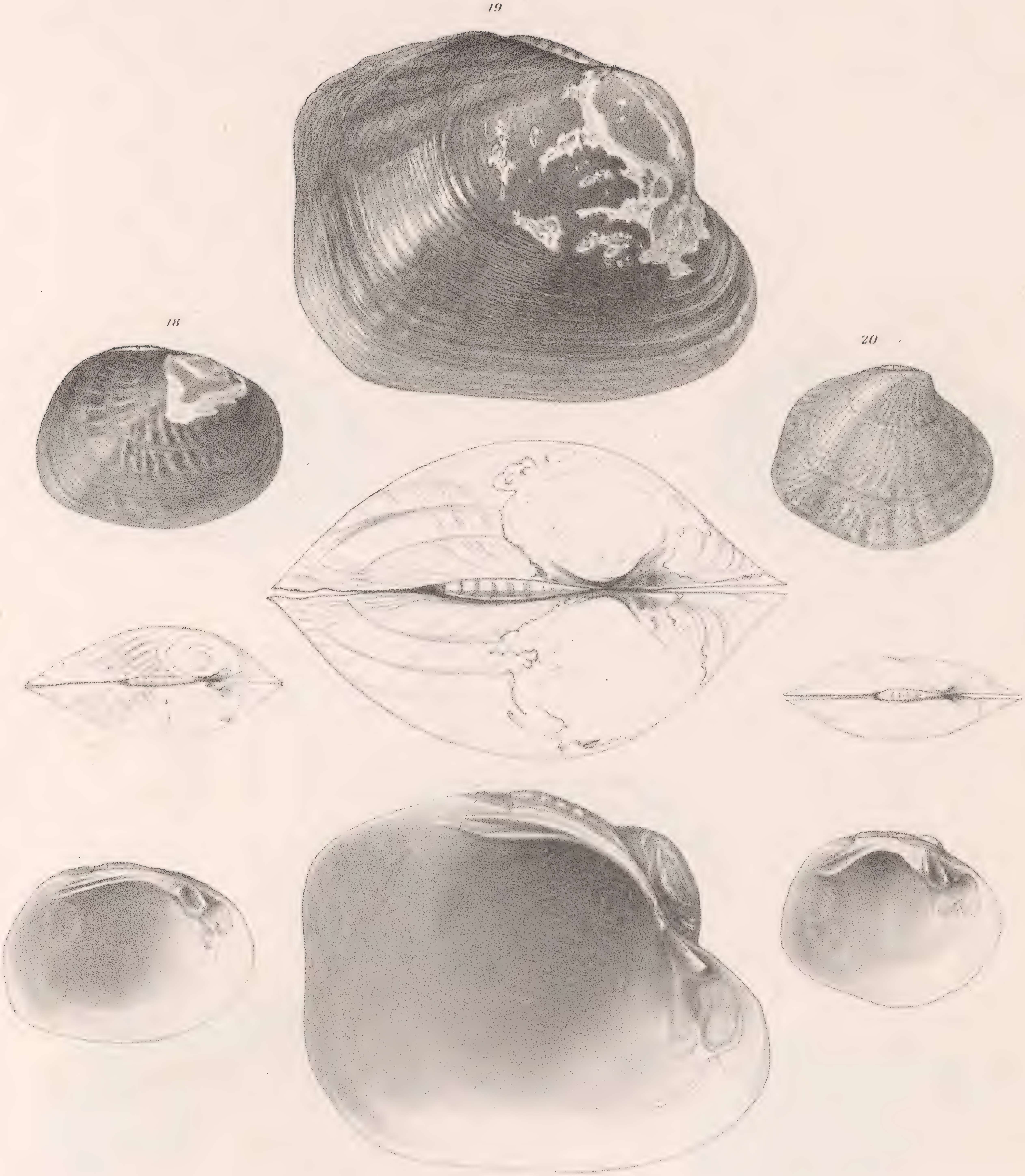

18 Unio Kleinianus.
19 „ satur.
20 „ Lamarckianus.

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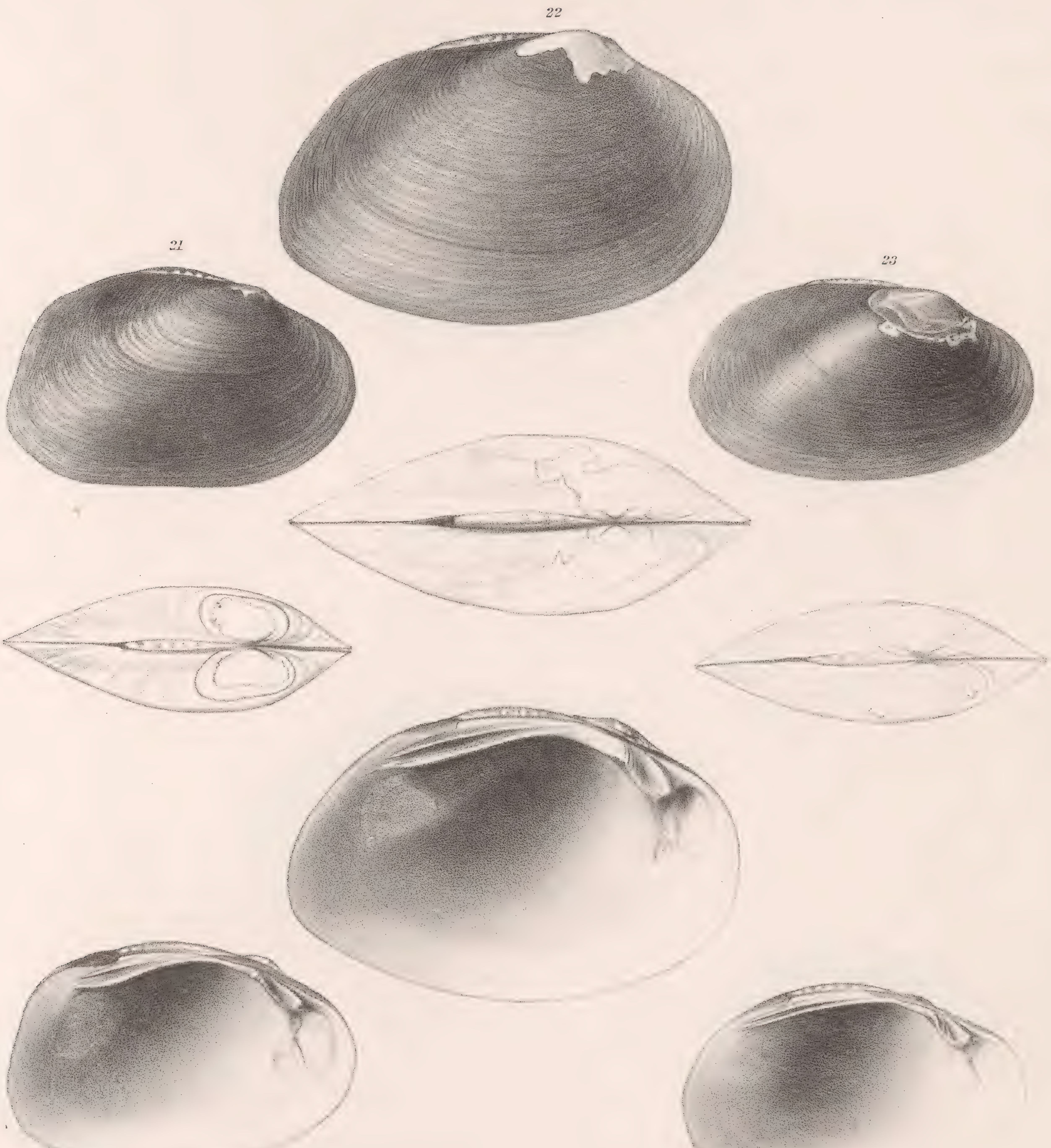

21 *Unio hebes*
22 " *Morissonianus*
23 " *nigerrimus*

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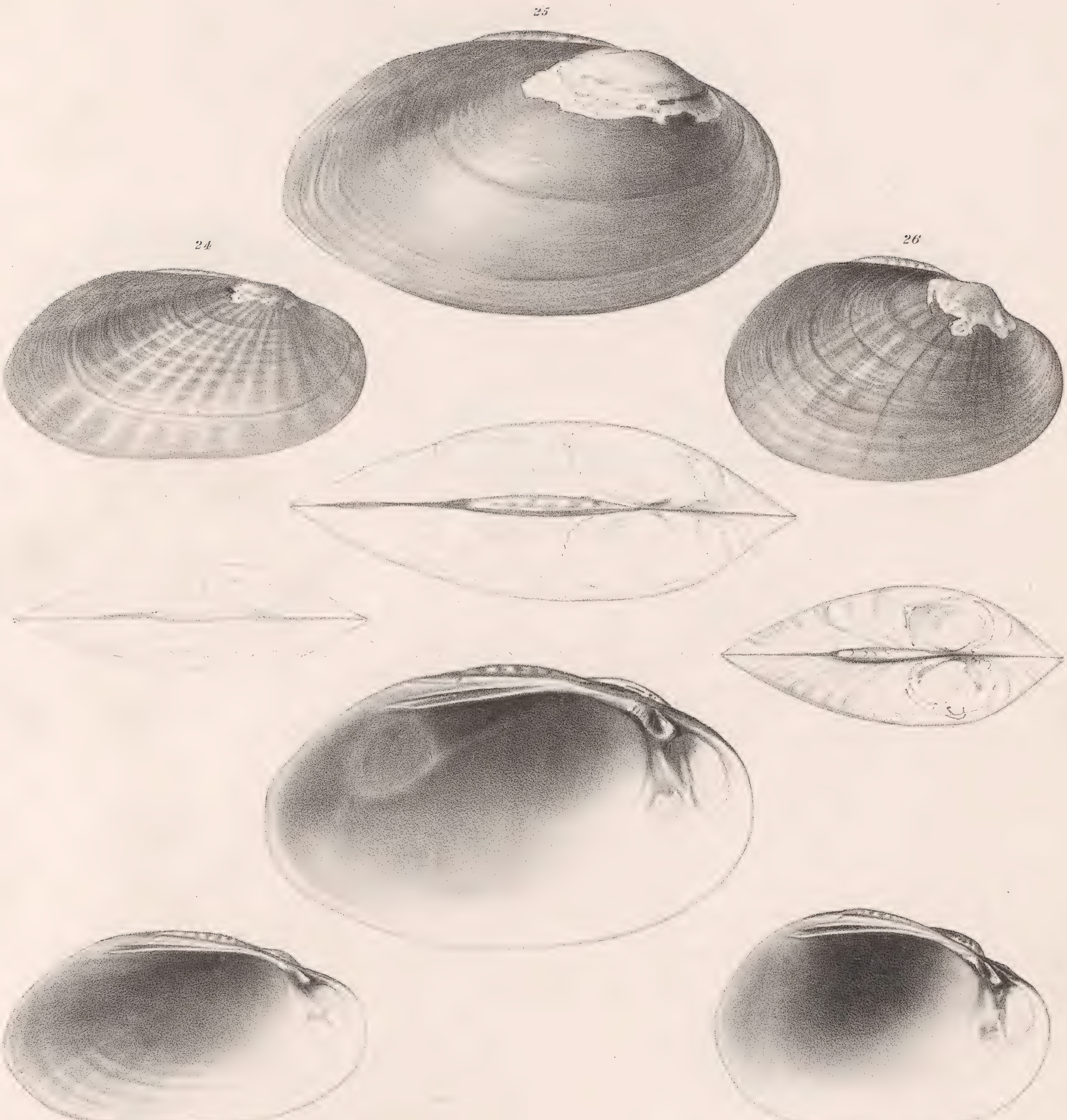

24 Unio Prevostianus
25 " Powellii
26 " affinis

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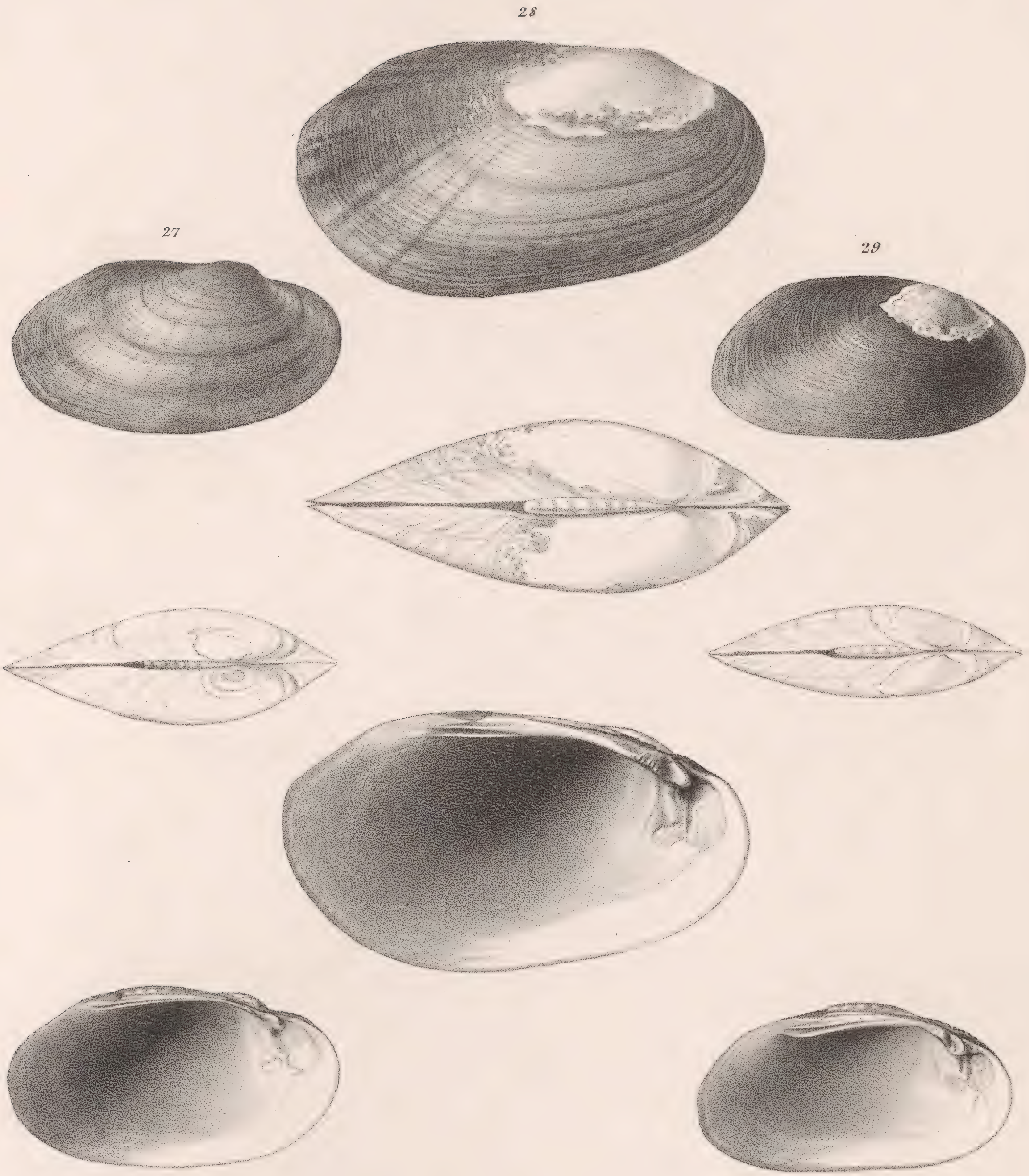

27 Unio proximus
28 " Reeveianus
29 " luridus

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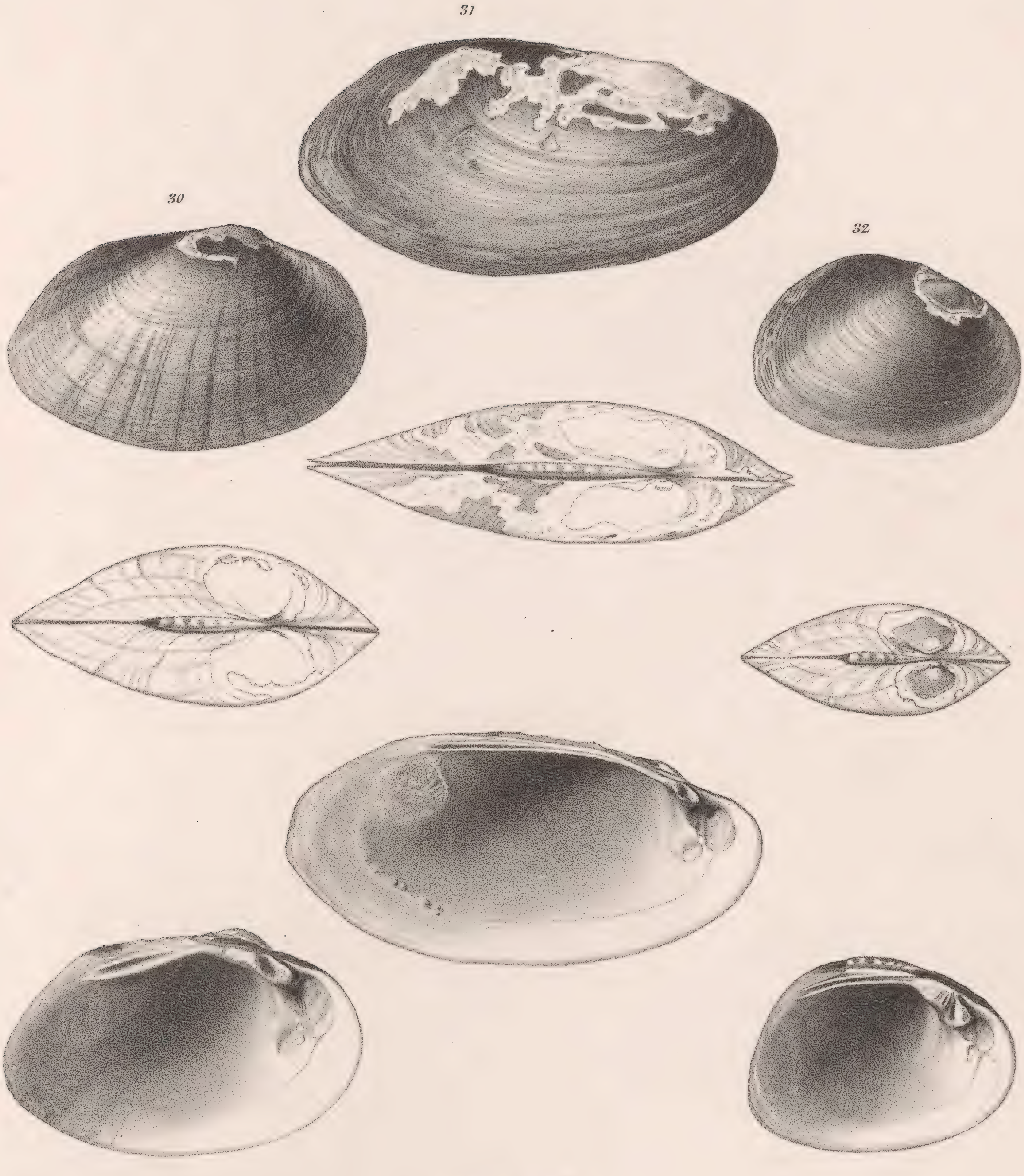

30 Unio Clarkianus
31 „ Floridensis
32 „ succissus

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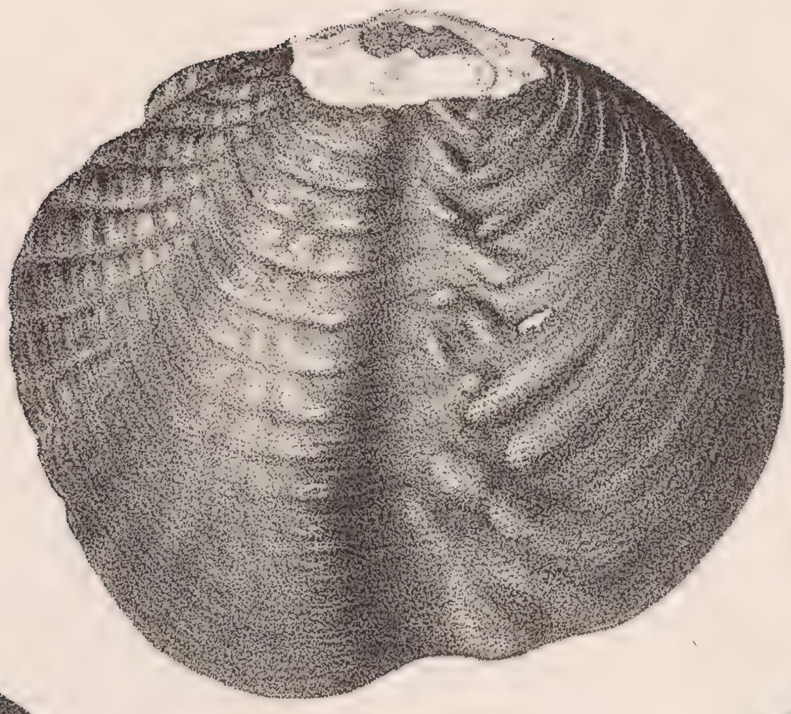
Sinclairs Lith.

34



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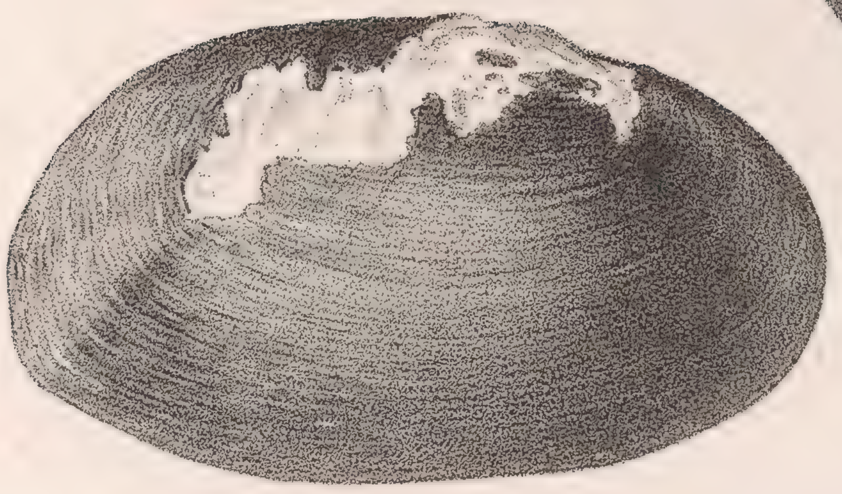

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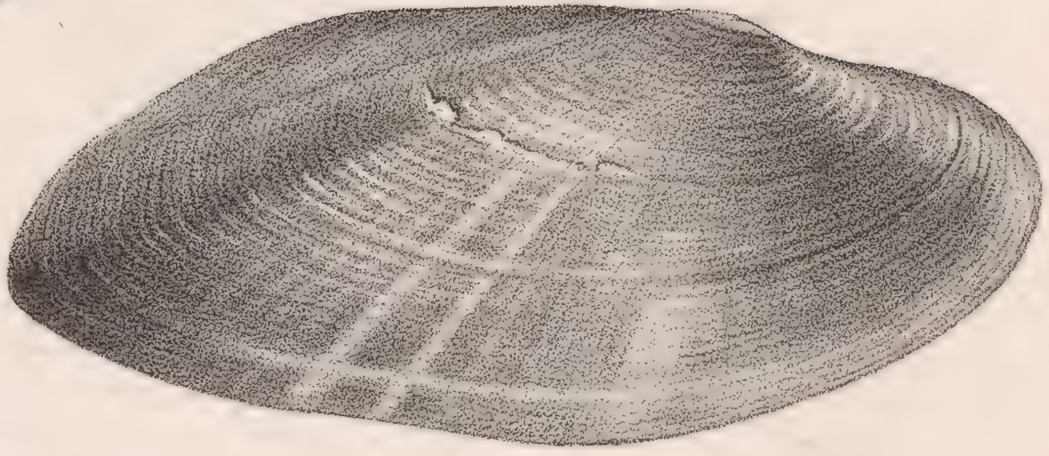

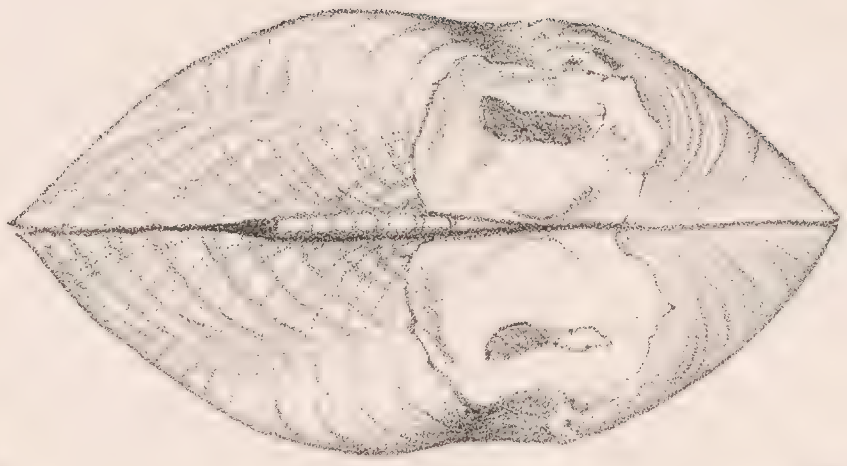

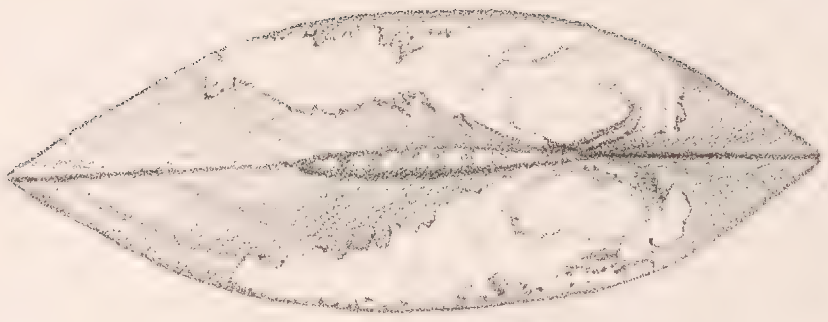

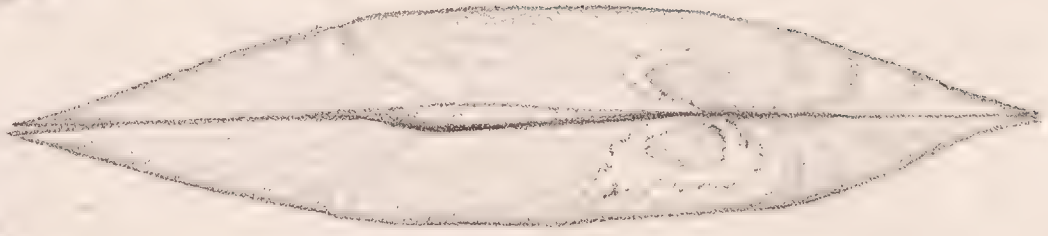

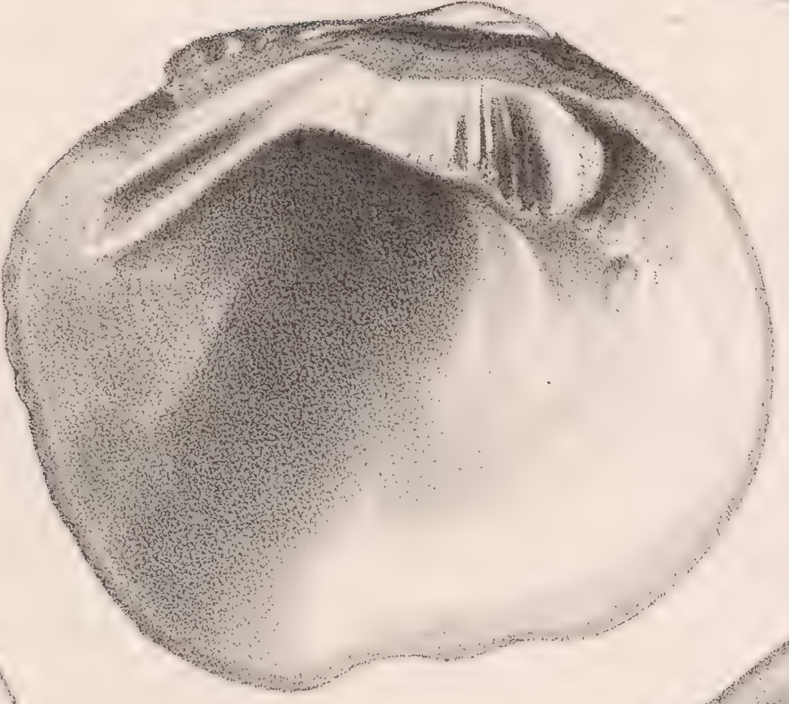

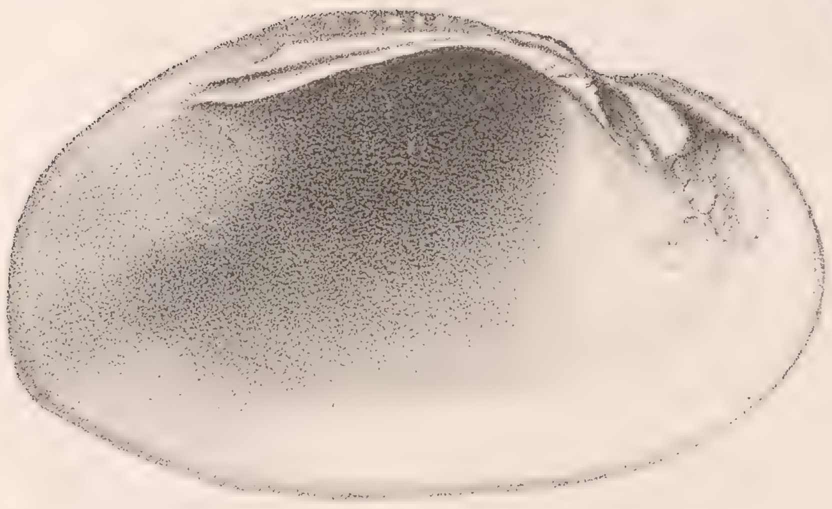

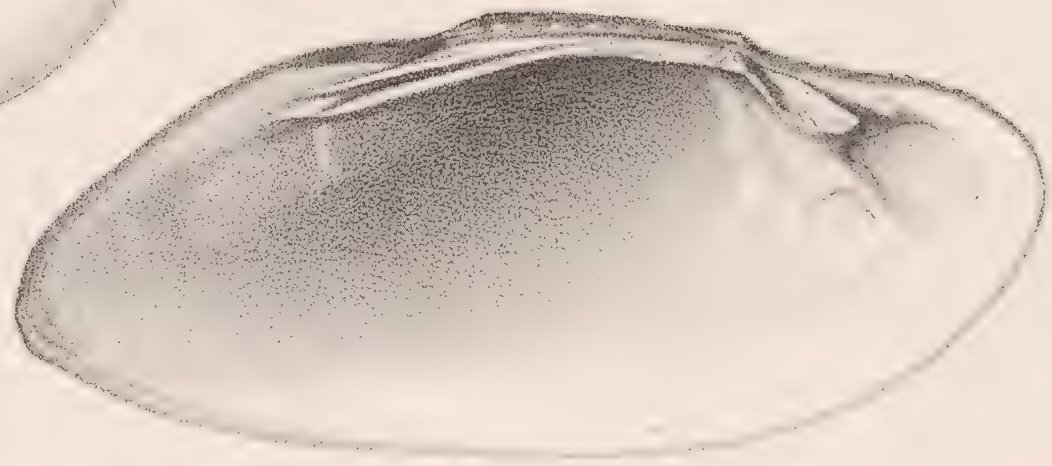

33 Unio Oregonensis
34 " Rhamphianus.
35 " sagittiformis.

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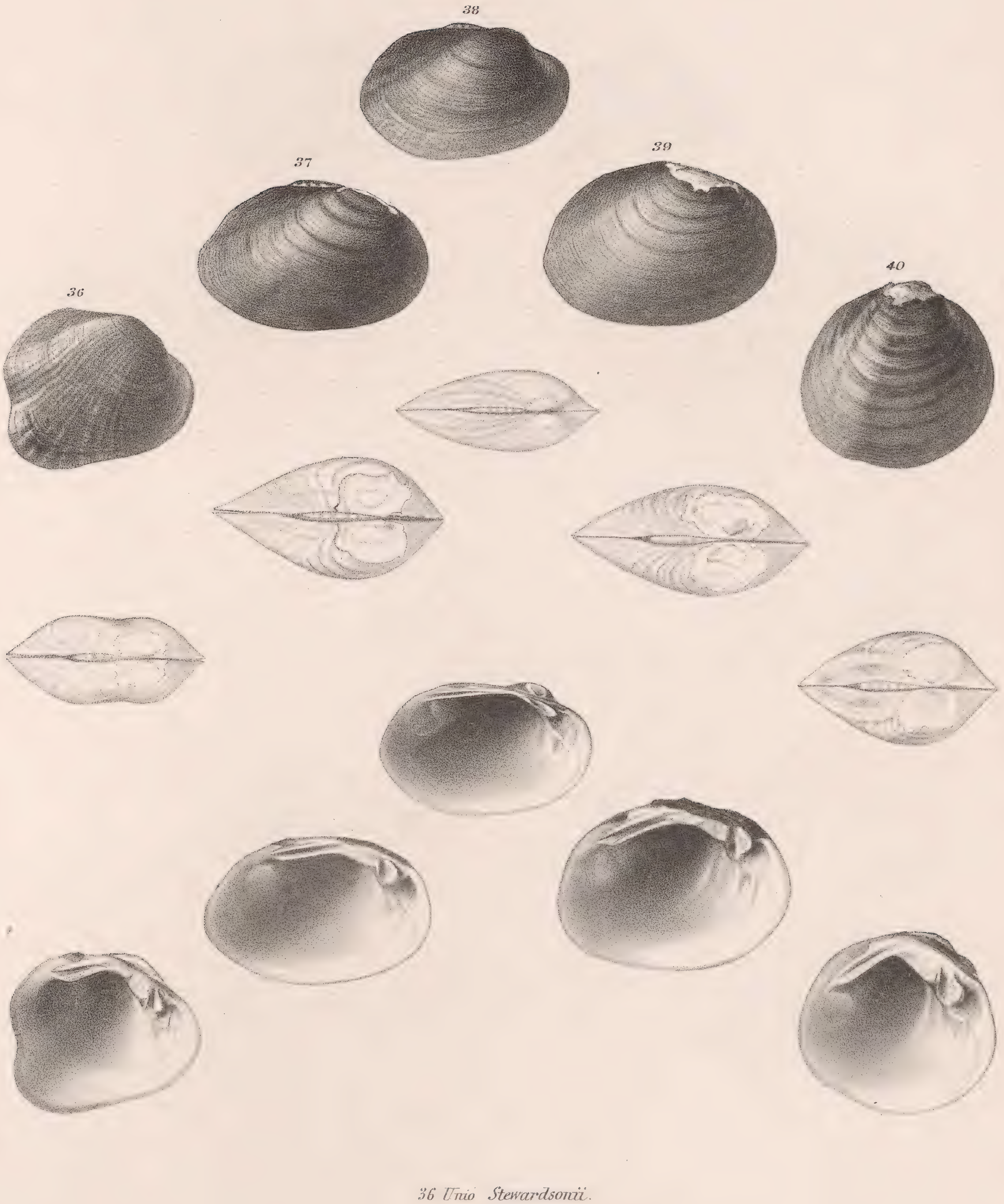
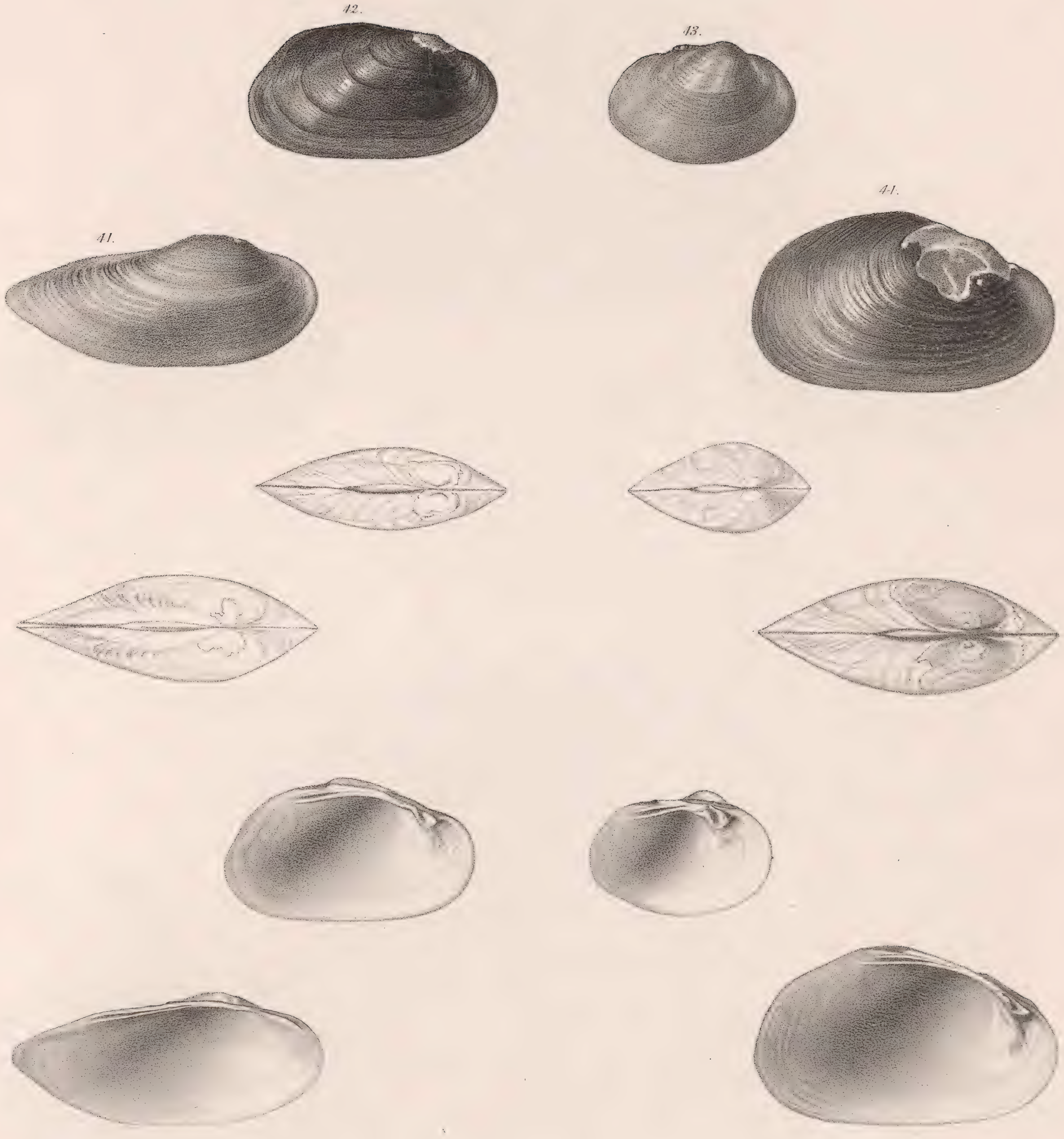
Sinclair's Lith.



36 Unio *Stewardsonii.*
37 „ *Hanleyanus.*
38 „ *placitus.*
39 „ *Troschelianus.*
40 „ *Keinerianus.*

From Nature by Ibbotson.

Sinclair's Lith



41 Unio Ingallsianus
42 „ nigellus
43 „ nux
44 „ nigrinus

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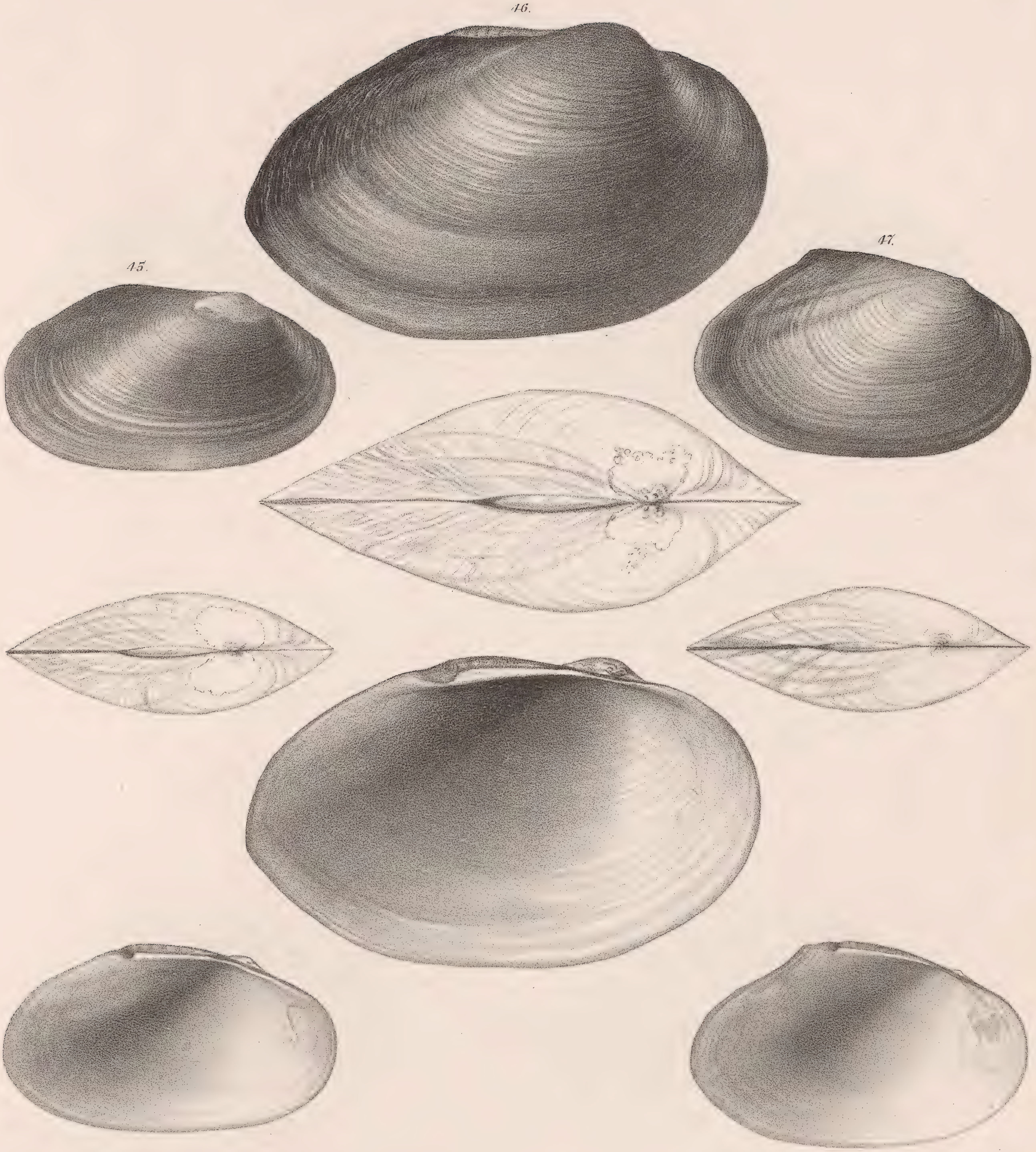

45 *Anodonta denigrata.*
46 „ *opaca.*
47 „ *Californiensis.*

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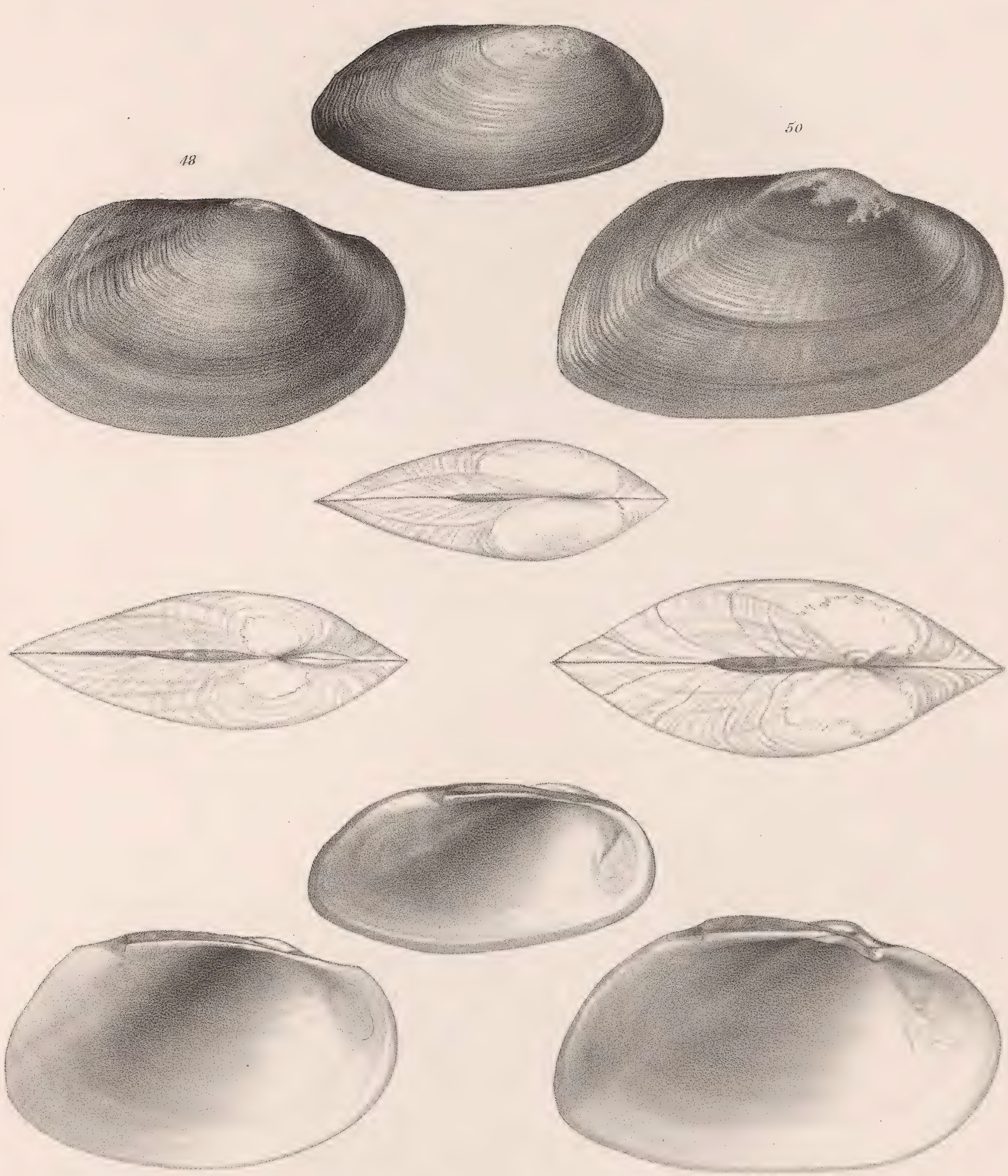
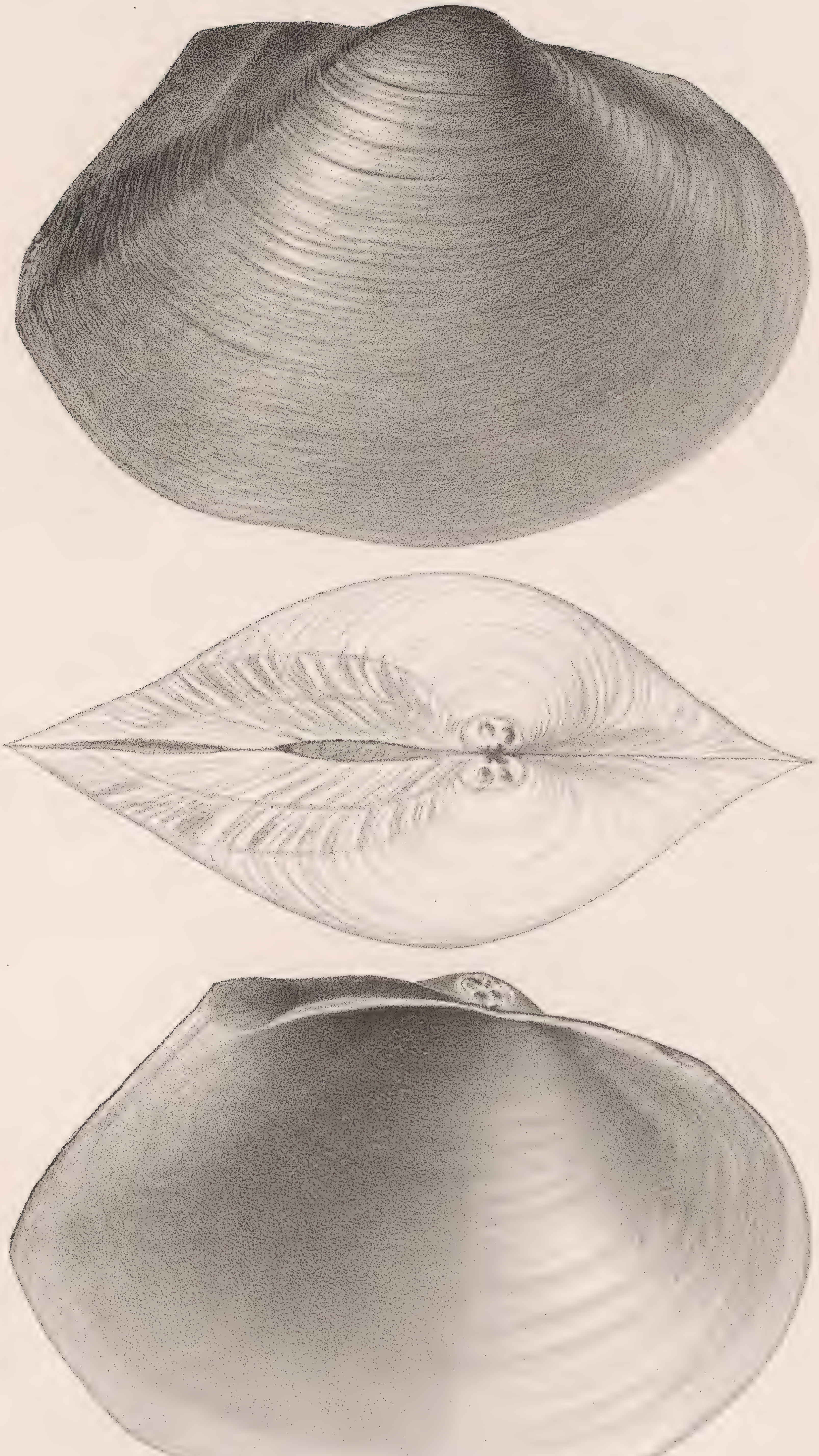
Sinclairs lith



48 *Anodonta Troutwiniana.*
49 „ *Wheatleyi.*
50 „ *Shaefferiana.*

From Nature by Ibbotson
Sinclairs Lith.

51.



51. Anodonta Linnæana.

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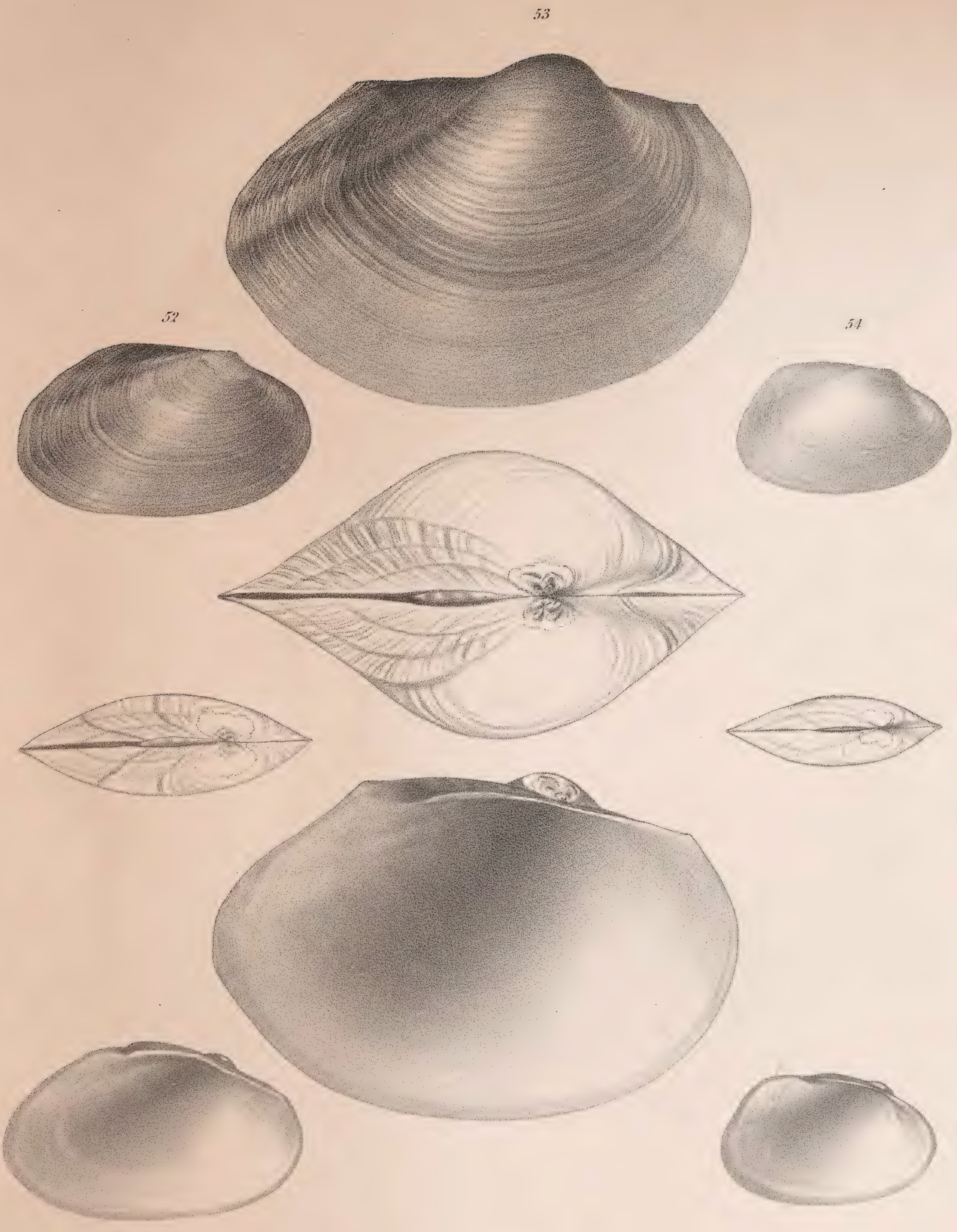
Sinclair's lith.



52 Anodonta oblita.
53 ,, virens.
54 ,, tortilis.

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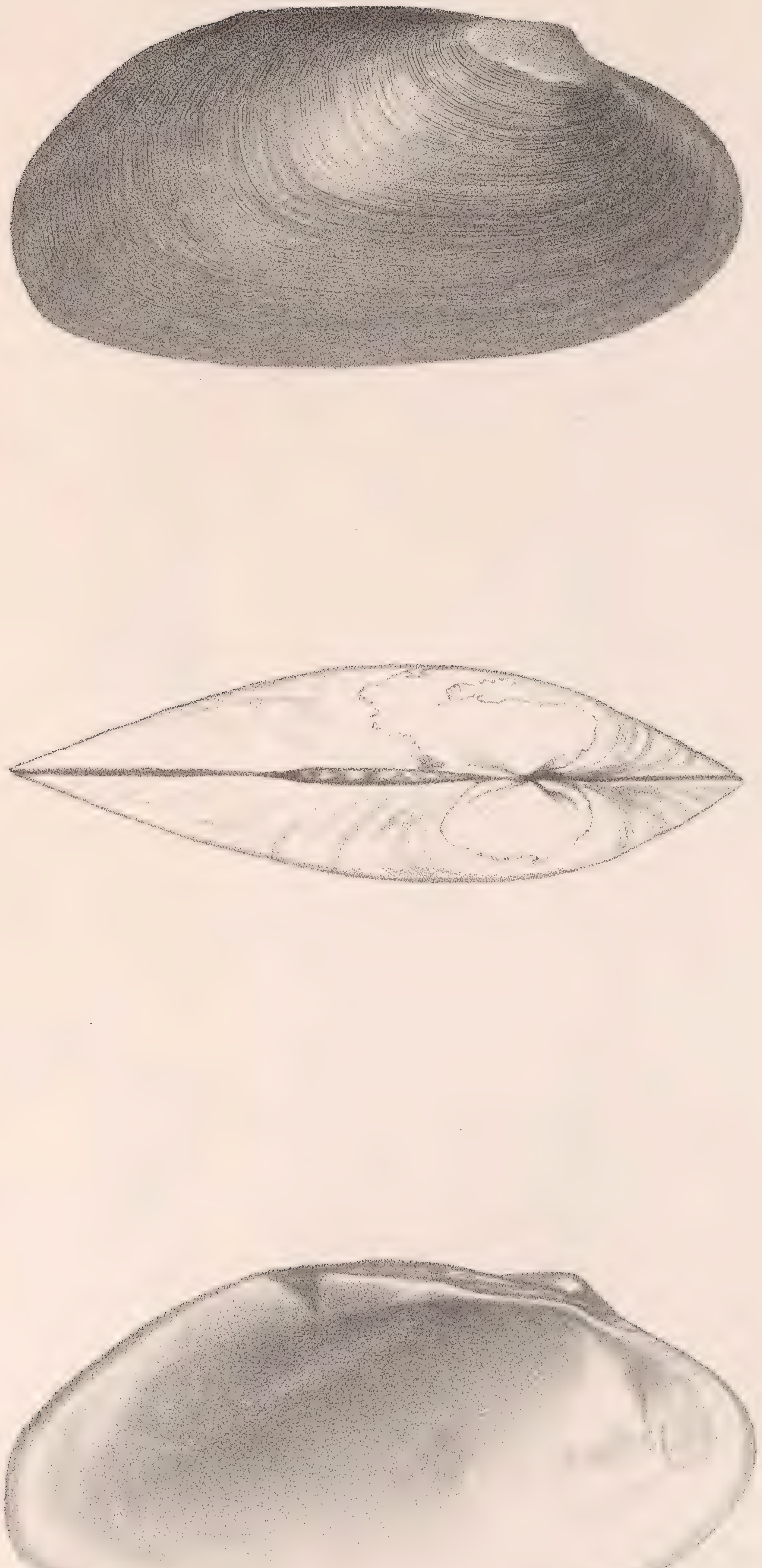
Sinclair's lith

55



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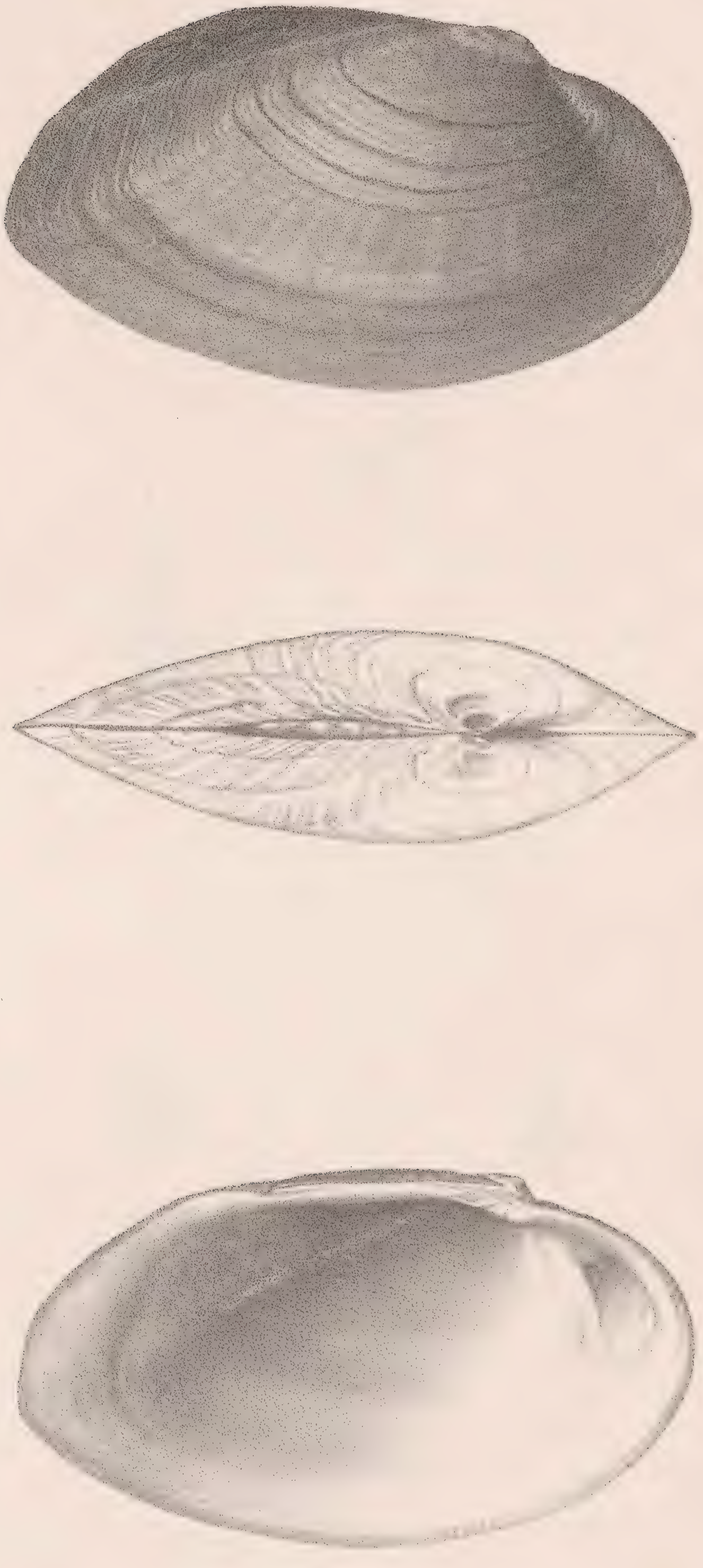

55 *Anodonta Schröteriana.*
56 „ *Arkansensis.*

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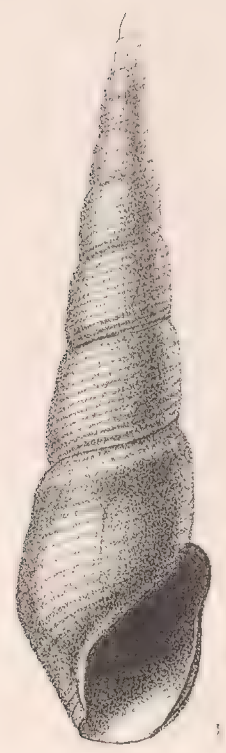
Sinclairs lith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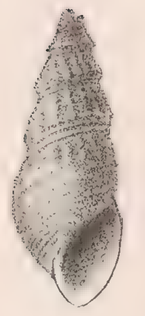
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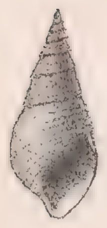
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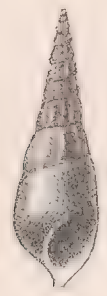
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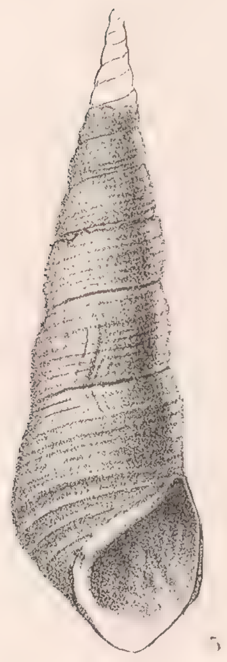
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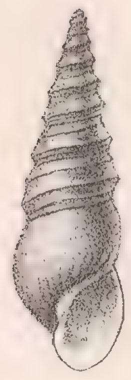
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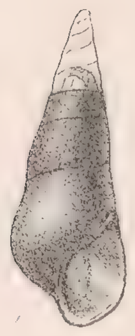
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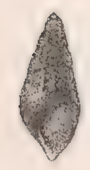
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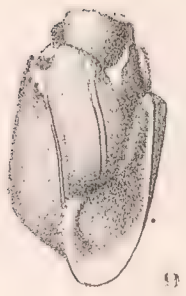
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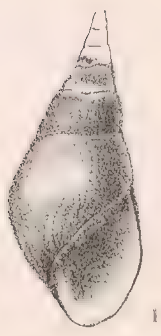
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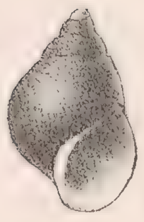
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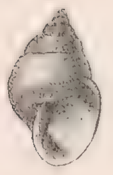
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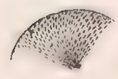
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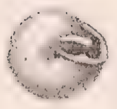
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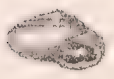
13 a

1 *Basistoma Edwardsii*
2 *Melania perstriata*
3 " *sculptilis*
4 " *Clarkii*
5 *Melania Brumbyi*
6 " *oblita*
7 " *furva*
8 " *Sellersiana*
9 " *oppugnata*
10 *Melania Saffordii*
11 " *pinguis*
12 " *gibbosa*
13 *Helix Lecontii*

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T. Sinclair Lith.

[illegible]

35/
1681⑤

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